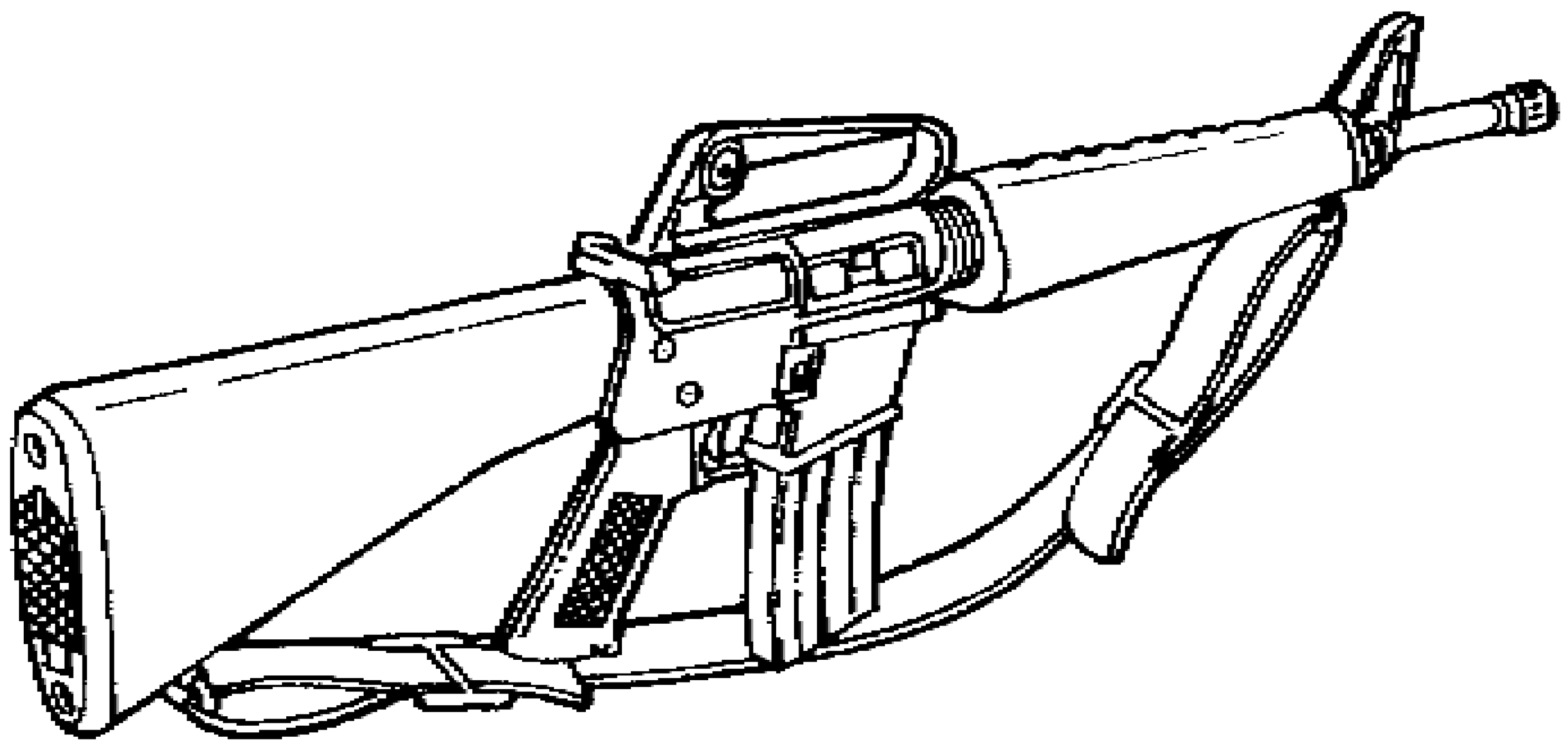
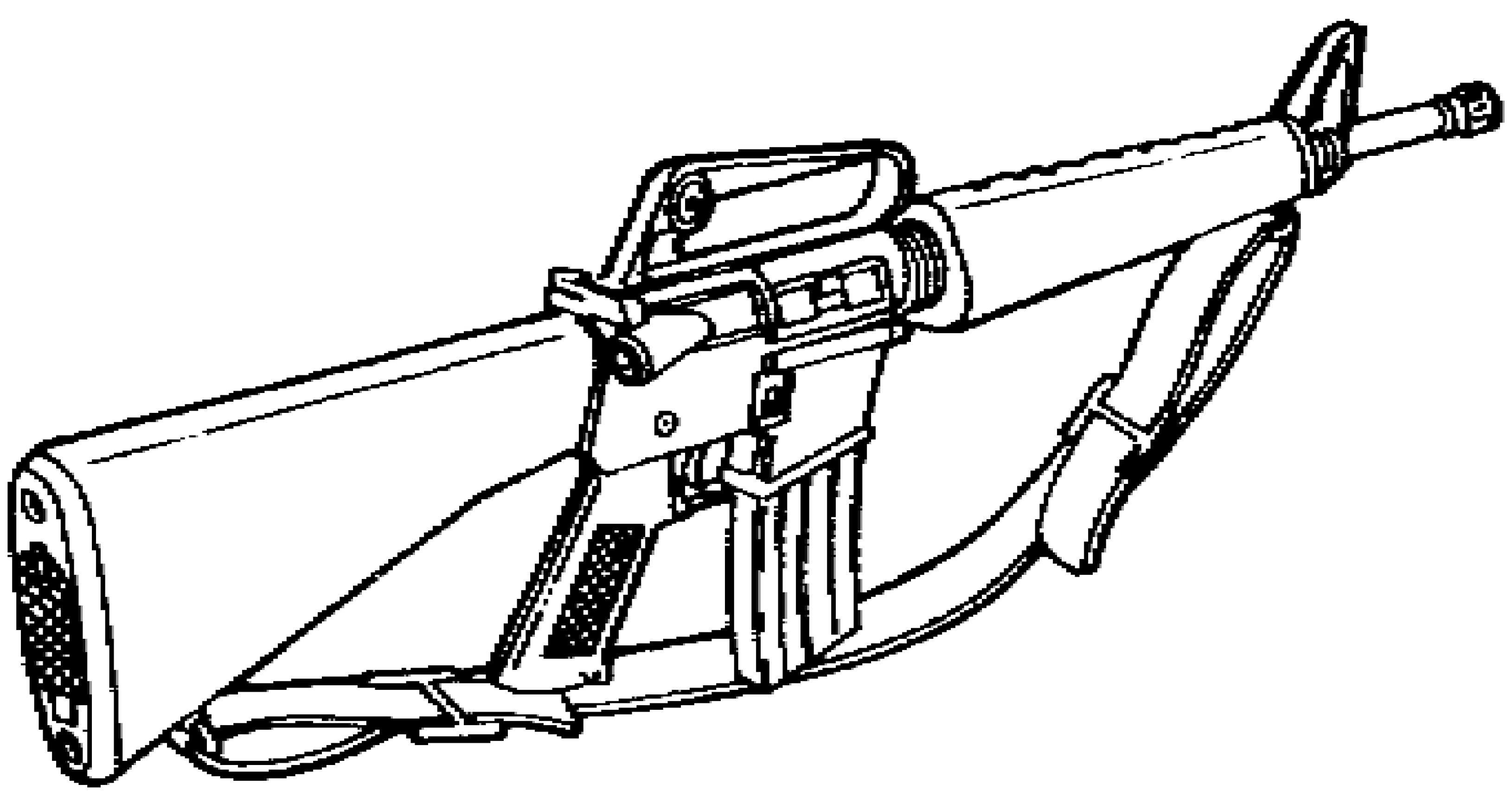
TM 9-1005-249-24&P

TECHNICAL MANUAL

ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)





RIFLE, 5.56-MM, M16
(1005-00-856-6885)
RIFLE, 5.56-MM, M16A1
(1005-00-073-9421)

HEADQUARTERS, DEPARTMENT OF THE ARMY

NOVEMBER 1983

This copy is a reprint which includes current pages from Changes 1 thru 3.

TECHNICAL MANUAL
No. 9-1005-249-24&P

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC *25 November 1983*

Organizational, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) RIFLE, 5.56-MM, M16 (1005-00-856-6885) RIFLE, 5.56-MM, M16A1 (1005-00-073-9421)

Current as of 20 July 1983

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAS (R), Rock Island, IL 61299. A reply will be furnished to you.

*This manual supersedes TM 9-1005-249-20, 11 September 1971, including all changes and TM 9-1005-249-34, 10 February 1972, including all changes.

HOW TO USE THIS MANUAL

GENERAL

In order to use this manual efficiently, there are several things you need to know:

1. All references in the manual are to pages only.
2. Illustrations for the maintenance procedures show only those parts affected by the operation being performed.
3. Whenever the male gender is mentioned in the manual (i.e., crewman, repairman), it also pertains to females.

INDEXES

This manual is organized to help you find the information you need quickly. There are several useful indexes.

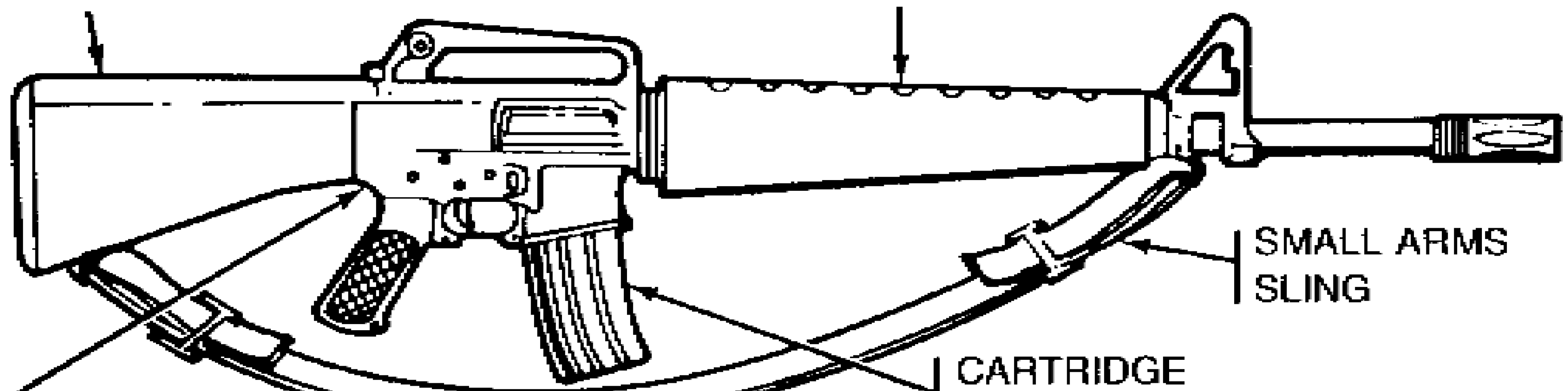
1. Front Cover Index. Lists the most important areas of the manual. Is keyed to areas with bleed-to-edge indicators.
2. Table of Contents. Lists in order all chapters, sections, and appendixes. Gives page references.
3. Nomenclature Cross-Reference List and List of Abbreviations.
4. Chapter Overviews. Summarize material covered in the chapter. Are located at the beginning of each chapter.
5. Symptom Index. Located just before the troubleshooting table in each maintenance chapter. Lists, in alphabetical order, parts of the weapon with possible malfunctions. References pages of the troubleshooting table.
6. Alphabetical Index. Located at the end of the manual. An extensive subject index for everything in the manual. Gives page references.

MAINTENANCE PROCEDURES

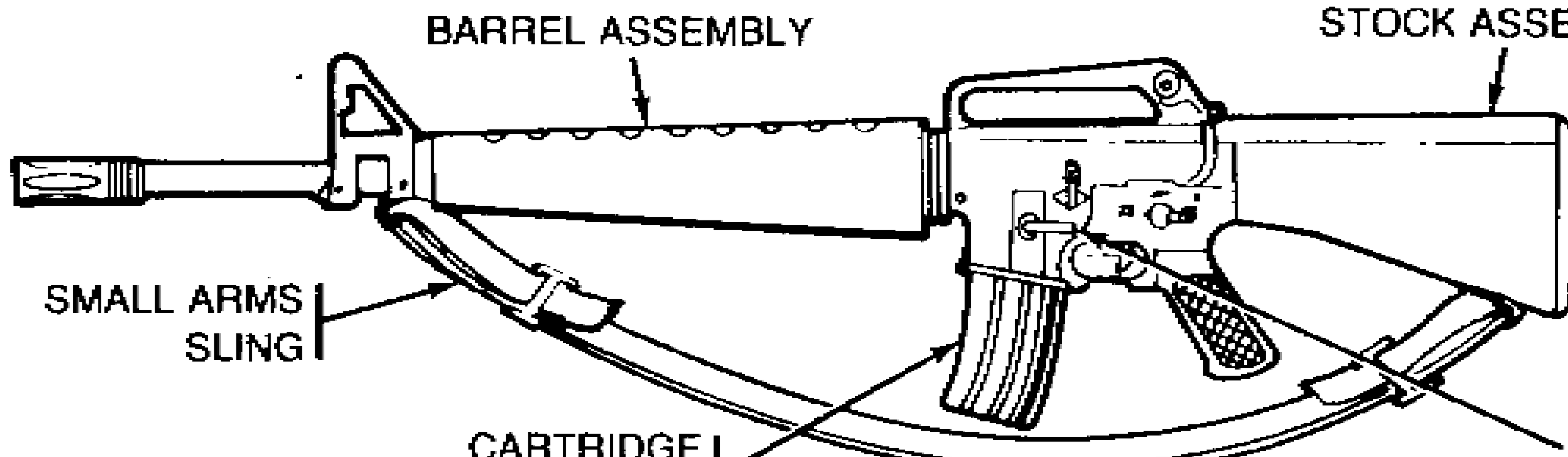
The maintenance procedures are broken up into separate tasks. Each task has an initial setup containing a list of the following things you will need in order to do your maintenance task:

1. Special Tools. Lists tools not found in your TOE authorized tool sets.
2. Materials/Parts. Lists expendable materials and 100% replaceable parts. Also lists for each removal procedure the main parts to be replaced. Do not order this part unless needed. Each material or part is followed by a part number or appendix reference. If more than one part is needed, the quantity needed precedes the part number or reference.
3. References. Lists other publications containing necessary information.
4. Troubleshooting Reference. Lists malfunctions which can be corrected by following the maintenance procedure.
5. Equipment Conditions. Lists conditions to be met before starting the procedure. The reference on the left of the condition is a page reference to instructions for setting up the condition.

EXTERNAL VIEW OF 5.56-MM RIFLE M16

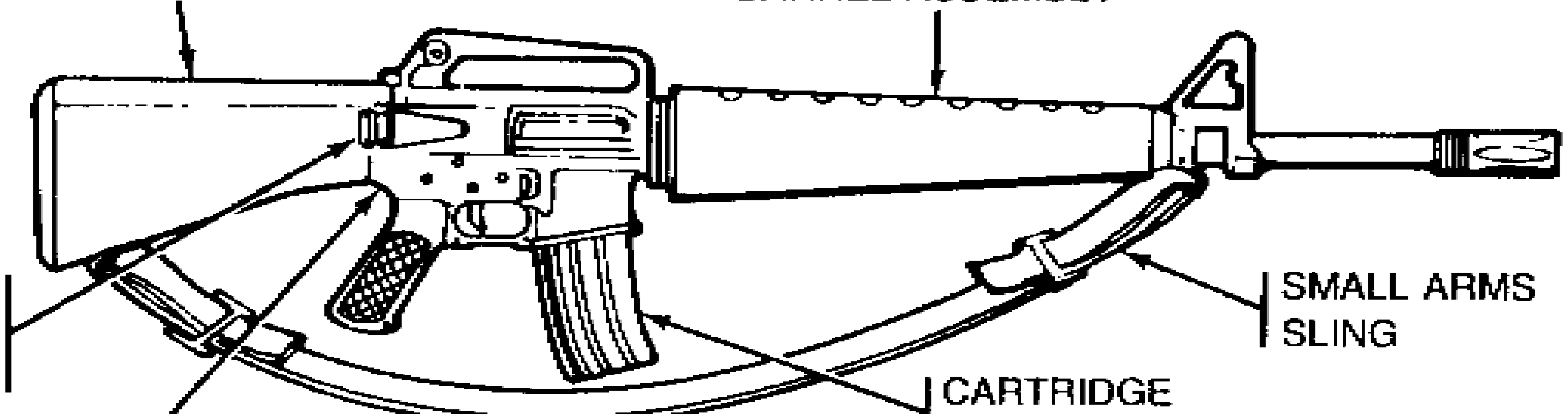


RIGHT SIDE

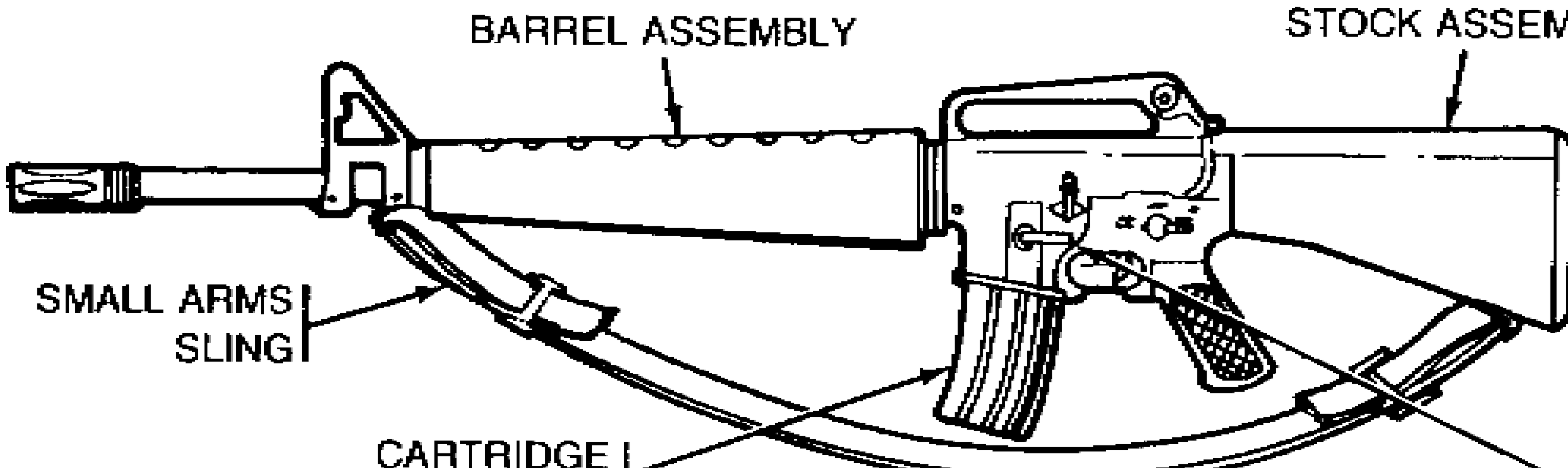


LEFT SIDE

EXTERNAL VIEW OF 5.56-MM RIFLE M16A1



RIGHT SIDE



LEFT SIDE

CHAPTER 1
INTRODUCTION

CHAPTER OVERVIEW

This chapter contains general information, equipment description and data, and principles of operation for your weapon.

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. *Type of Manual:* Organizational, Direct, and General Support Maintenance

b. *Model Number and Equipment Name:* 5.56-mm Rifle M16 and M16A1

c. *Purpose of Equipment.* Provides personnel an offensive capability to engage targets for field use.

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System.

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE. See TM 750-244-7.

1-4. PREPARATION FOR STORAGE OR SHIPMENT. See TM 740-90-1

1-5. OFFICIAL NOMENCLATURE, NAMES, AND DESIGNATIONS.

NOMENCLATURE CROSS-REFERENCE LIST

Common Name	*Official Nomenclature*
Action Spring	Compression Helical Spring (8448629)
Pivot Pin Detent	Takedown Pin Detent (8448585)
Weapon	5.56-mm Rifle M16 or M16A1
Trigger Spring	Torsion Helical Spring (8448593)
Disconnector Spring	Compression Helical Spring (8448594)
Extractor Spring Assembly	Spring Assembly (8448755)
Ejector Spring	Helical Spring (8448516)
Magazine Catch Spring	Compression Helical Spring (8448637)
Bolt Catch Spring	Compression Helical Spring (8448633)
Hammer Spring	Torsion Helical Spring (8448611)

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your rifle needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, US Army Armament, Munitions and Chemical Command, ATTN: DRSMC-MAO (R), Rock Island, IL 61299. We'll send you a reply.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

a. *Characteristics.*

(1) Lightweight
(2) Air-cooled
(3) Gas-operated
(4) Magazine-fed
(5) Semi or automatic fire

b. *Capabilities.* Provide personnel an offensive defensive capability to engage targets while in the field role.

c. *Features.*

(1) The bolt locking action is one of the mechanical features of the weapon. The bolt and barrel tension contain locking lugs which engage and lock the bolt firmly in the barrel extension. The initial force of the explosion of the cartridge is absorbed by the barrel, barrel extension, and bolt.

(2) The trigger guard is easily adaptable to winter operations. A spring-loaded retaining pin is depressed to allow ready access to the trigger when wearing arctic mittens.

(3) The ejection port cover prevents dirt or sand from getting into the ejection port. The cover must be closed during periods when firing is not anticipated. It opens automatically by the forward or rearward movement of the bolt carrier.

1-8. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

(A) CARTRIDGE MAGAZINE. 30 cartridge capacity.

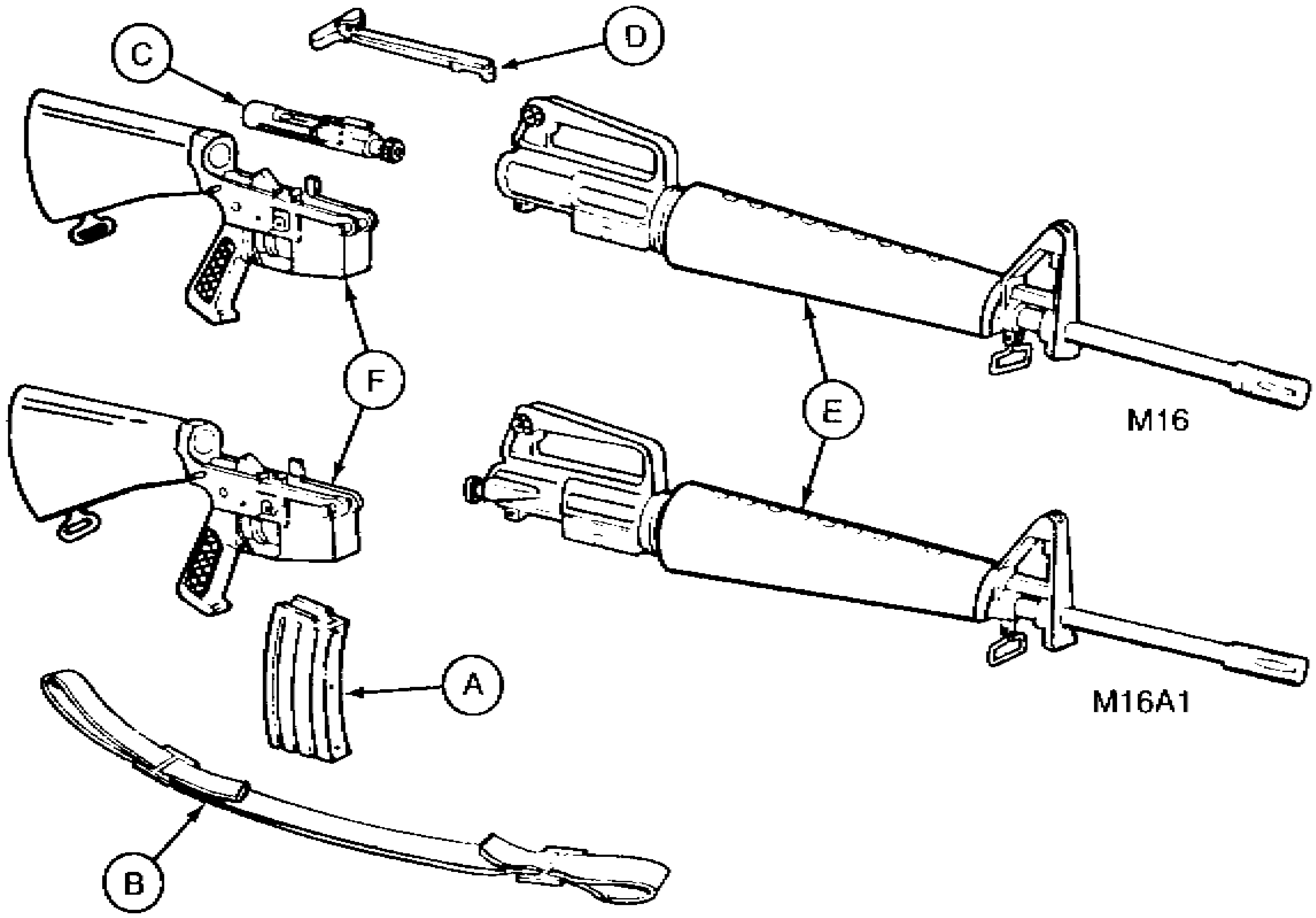
(B) SMALL ARMS SLING. The small arms sling is adjustable and provides a means to carry the weapon.

(C) BOLT CARRIER ASSEMBLY. Carries bolt to chamber and fires the weapon. Contains the firing pin, extractor, bolt, ejector, and cam pin.

(D) CHARGING HANDLE ASSEMBLY. Provides a means of charging the weapon.

(E) UPPER RECEIVER AND BARREL ASSEMBLY. Rifle barrel assembly is air-cooled, contains flash suppressor and front sight assembly, and holds the two hand guards and the sling swivel. Upper receiver contains rear sight, ejection port, ejection port cover, and a housing for the bolt carrier and bolt assembly. A forward assist assembly is used on the M16A1 weapon.

(F) LOWER RECEIVER AND EXTENSION ASSEMBLY. Lower receiver contains the trigger assembly, sear, hammer assembly, selector lever, rifle grip, bolt catch, and shoulder gun stock assembly. The shoulder gun stock assembly houses the action spring, buffer assembly, and extension assembly.



1-9. DIFFERENCES BETWEEN MODELS. The 5.56-mm Rifle M16 does not contain the forward assist assembly contained on 5.56-mm Rifle M16A1.

1-10. EQUIPMENT DATA.

a. *Rifles M16 and M16A1.*

Weight:

Rifle M16, without magazine and sling	6.35 lb
Rifle M16A1, without magazine and sling	6.55 lb
Sling M1	0.4 lb
Empty magazine	0.25 lb
Loaded magazine	1.01 lb
Rifle M16, w/sling and loaded magazine	7.76 lb
Rifle M16A1 w/sling and loaded magazine	7.76 lb
Bayonet-Knife M7	0.6 lb
Scabbard M8A1	0.3 lb
Scabbard M10	0.3 lb

Length:

Rifle w/flash suppressor	39 in.
Rifle w/bayonet-knife	44.25 in.
Barrel	20 in.
Barrel with flash suppressor	21 in.

Mechanical features:

Rifling, RH 6 grooves-1 turn in 12 inches.

Method of operation	gas
Type of breech mechanism	rotating bolt
Method of feeding	magazine
Cooling	air
Trigger pull	5 to 8 1/2 lb

Ammunition:

Caliber	5.56 mm
Type	ball, blank, dummy and tracer

Firing characteristics:

Muzzle velocity (approximate)	3,250 fps
Muzzle energy	1,300 ft-lb
Chamber pressure	52,000 psi
Cyclic rate of fire (approximate)	800 rds/m

Maximum rate of fire:

Semiautomatic	45/65 rds/m
Automatic	150/200 rds/m
Sustained rate of fire	12/15 rds/m
Maximum range	2,653 meters
Maximum effective range	460 meters

b. *Rifle Bipod M3.*

Weight:

Bipod	0.6 lb
Bipod case	0.2 lb

Section III. PRINCIPLES OF OPERATION

1-11. GENERAL. The weapon:

a. *Is gas-operated.* It fires in either the automatic or semiautomatic mode.

b. *Has positive locking of the bolt.* Firing pin is part of the bolt and carrier assembly and cannot strike the primer until the bolt is fully locked.

1-12. PRINCIPLES OF OPERATION.

(A) CARTRIDGE MAGAZINE. Holds cartridges ready for feeding and provides a guide for positioning cartridges for stripping. Provides quick reload capabilities for sustained firing.

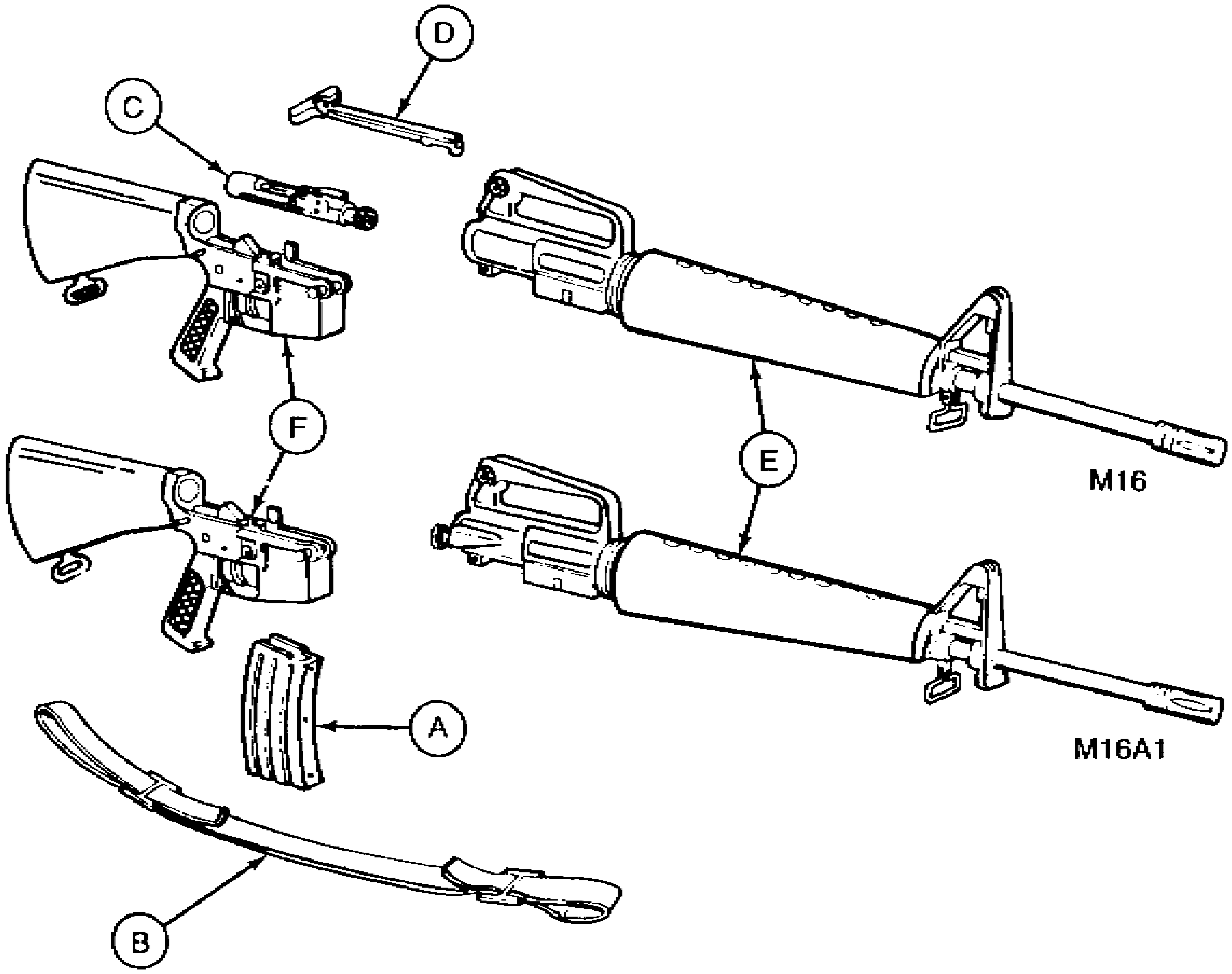
(B) SMALL ARMS SLING. Provides the means for carrying the weapon.

(C) BOLT AND CARRIER ASSEMBLY. Provides stripping, chambering, locking, firing, extraction, and ejection of cartridges using the drive springs and projectile propelling gases for power.

(D) CHARGING HANDLE ASSEMBLY. Provides initial charging of the weapon. The charging handle latch locks the handle in the forward position during sustained fire to prevent injury to the operator.

(E) UPPER RECEIVER AND BARREL ASSEMBLY. Provides support for the bolt carrier assembly. The barrel chambers the cartridge for firing and directs the projectile.

(F) LOWER RECEIVER AND EXTENSION ASSEMBLY. Provides firing control for the weapon and provides storage for basic cleaning materials.



CHAPTER 2
ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

CHAPTER OVERVIEW

This chapter contains information and instructions to help keep the weapon in good repair. The chapter contains:

a. Repair Parts, Special Tools, TMDE, and Support Equipment
b. Service Upon Receipt
c. Preventive Maintenance Checks and Services (PMCS)
d. Troubleshooting
e. Decontamination of Rifles and Arms Rooms
f. Maintenance Procedures

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

2-1. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Table of Organization and Equipment/Modified Table of Organization and Equipment (TOE/MTOE) applicable to your unit.

2-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Special tools required for organizational support are listed in appendix C. Fabricated tools are listed and illustrated in appendix E.

2-3. REPAIR PARTS. Repair parts are listed in and illustrated in appendix C of this manual.

Section II. SERVICE UPON RECEIPT

2-4. GENERAL.

a. Inspect the weapon for damage incurred during shipment. If the equipment has been damaged, report the damage on SF Form 364, Report of Discrepancy (ROD).

b. Check the weapon against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions in TM 38-750.

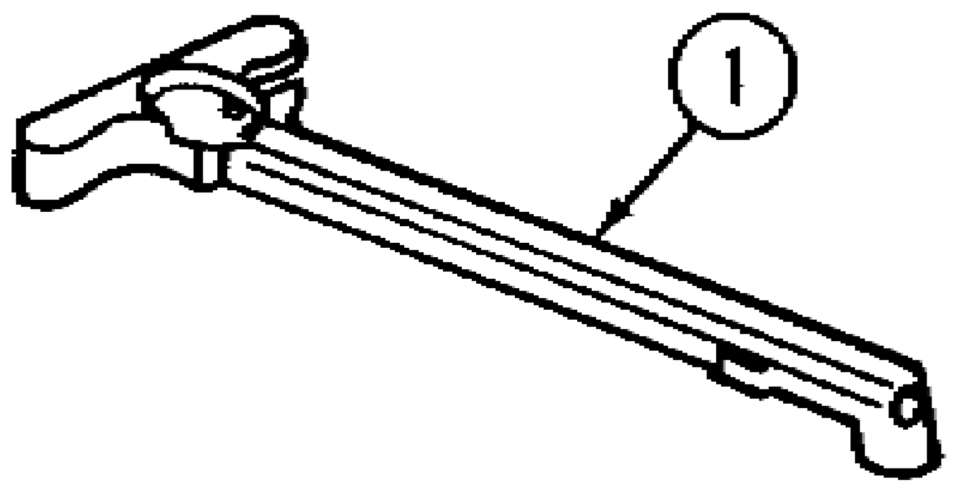
c. Check to see whether the equipment has been modified.

d. Check to see if all MWO's have been applied.

2-5. SERVICE UPON RECEIPT OF MATERIEL. Refer to the following table.

SERVICE UPON RECEIPT - M16/M16A1 RIFLE

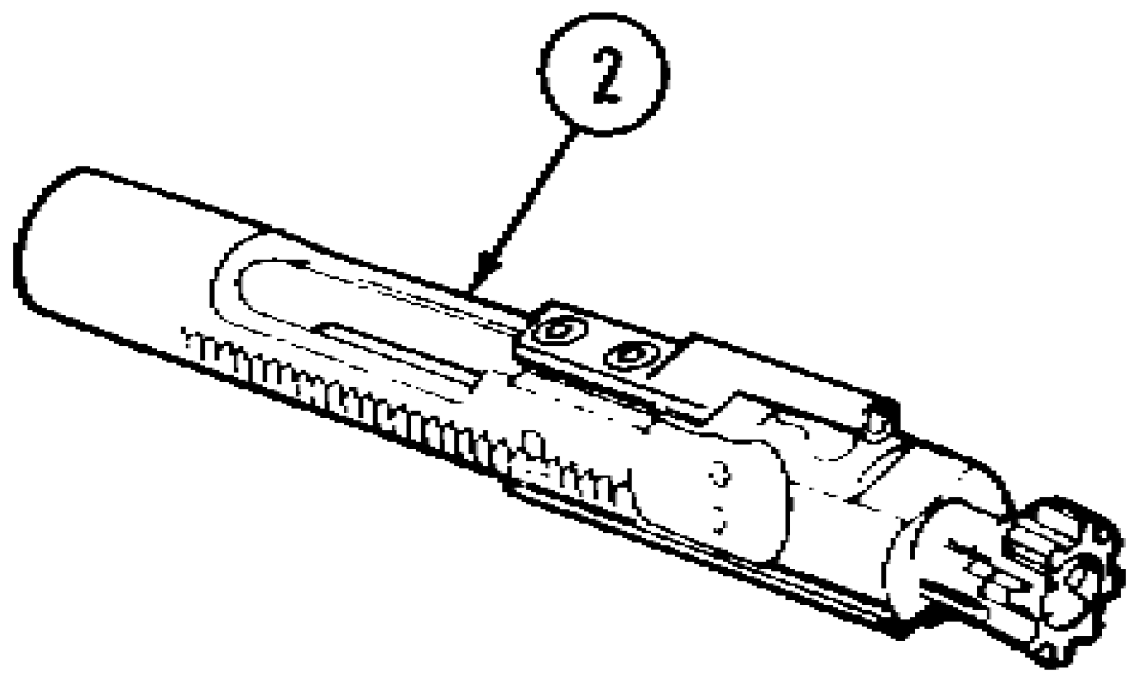
LOCATION	ITEM	ACTION	REMARKS
M16/M16A1 Rifle	a. Charging handle assembly (1)	Clear the weapon.	Reference TM 9-1005-2'?-10.



WARNING

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

LOCATION	ITEM	ACTION	REMARKS
	b. Bolt carrier assembly and bolt assembly (2)	Remove.	Reference TM 9-1005-249-10.



LOCATION	ITEM	ACTION	REMARKS
	c. All components	Visually inspect for proper assembly, damage, or for missing parts. Clean and lubricate.	Reference TM 9-1005-249-10.

NOTE

Wipe excess oil from bore and chamber. Particular attention should be given to cleaning the bolt carrier key.

LOCATION	ITEM	ACTION	REMARKS
	d. Bolt carrier assembly and bolt assembly	Reassemble.	Reference TM 9-1005-249-10.
		Hand function to assure proper operation.	Reference TM 9-1005-249-10.
	e. Cartridge magazine	Check for positive retention and functioning of bo'' catch.	Reference TM 9-1005-249-10.

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-6. GENERAL. This section contains the procedures and instructions necessary to perform organizational preventive maintenance checks and services. These services are to be performed by organizational maintenance personnel with the assistance, where practical, of the operator/crew.

2-7. PREVENTIVE MAINTENANCE CHECKS AND SERVICES.

WARNING

Before starting an inspection, be sure to clear the weapon. Do not keep live ammunition near the work area.

a. *General.* The PMCS procedures are contained in the table below. They are arranged in logical sequence requiring a minimum amount of time and motion on the part of the persons performing them and are arranged so that there will be a minimum interference between persons performing checks simultaneously on the same end item.

b. *Item Number Column.* Checks and services are numbered in chronological order regardless of interval. This column shall be used as a source of item numbers for the "TM Number" column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording results in PMCS.

c. *Item To Be Inspected Column.* The items listed in this column are divided into groups indicating the portion of the equipment of which they are a part, for example, "Cartridge Magazine," "Bolt Carrier Assembly."

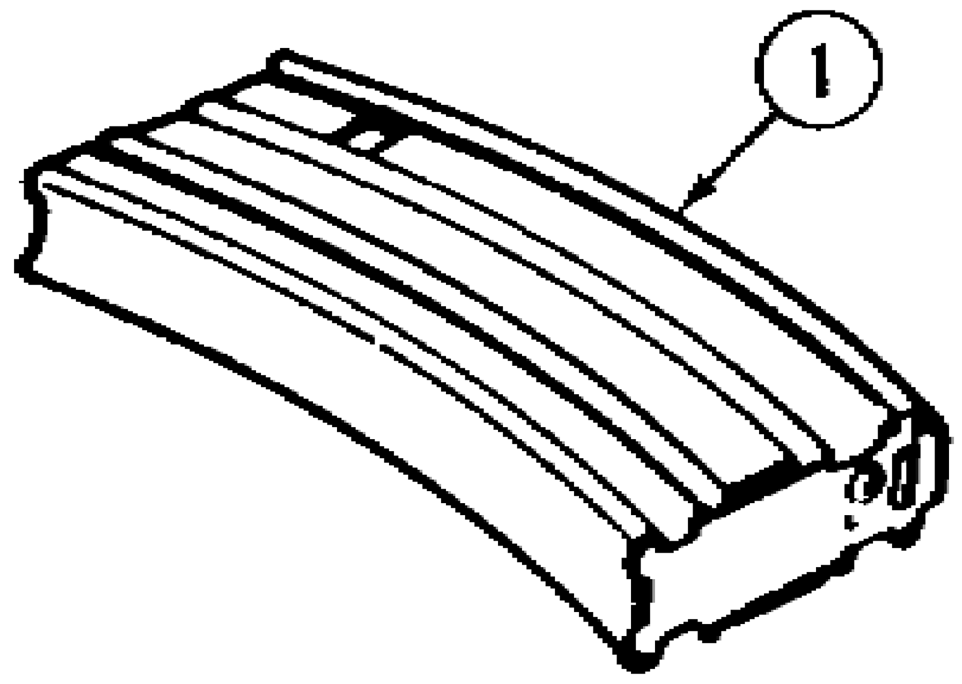
d. *Procedures Column.* This column contains a brief description of the procedure by which the check is to be performed. It contains all the information required to accomplish the checks and services.

ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE

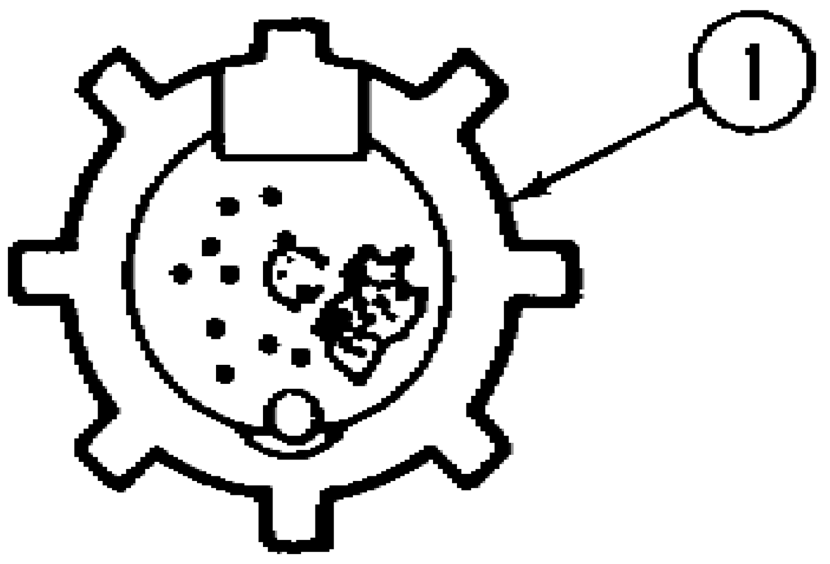
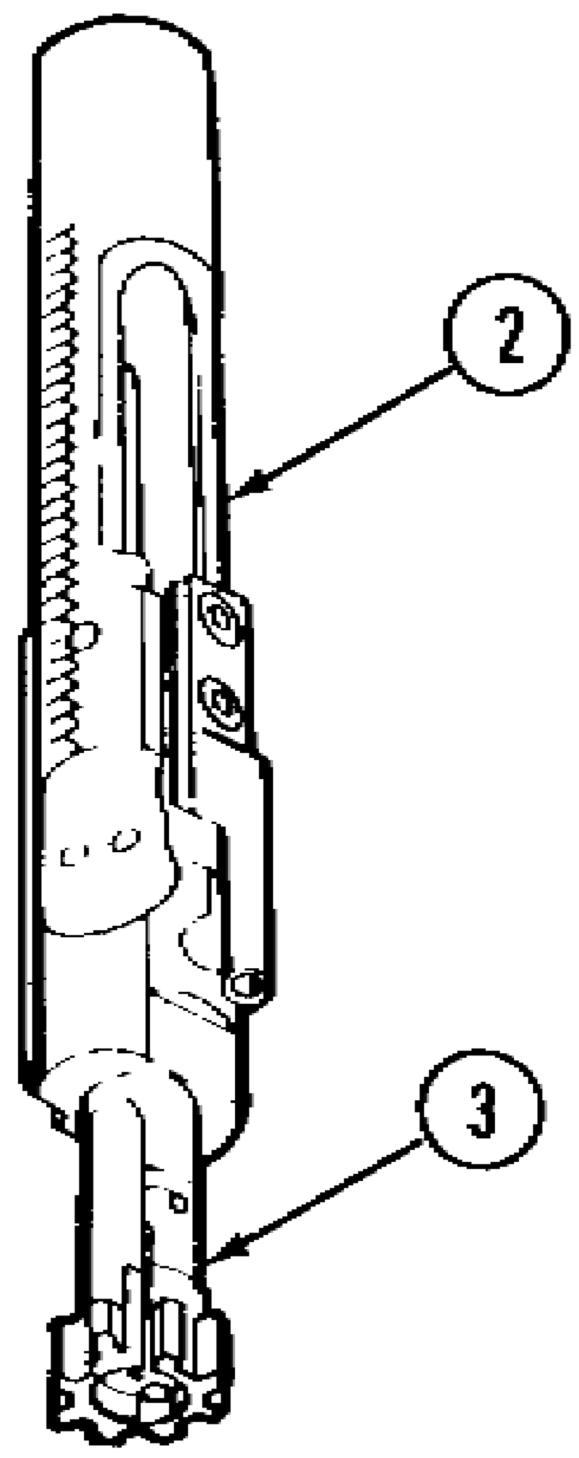
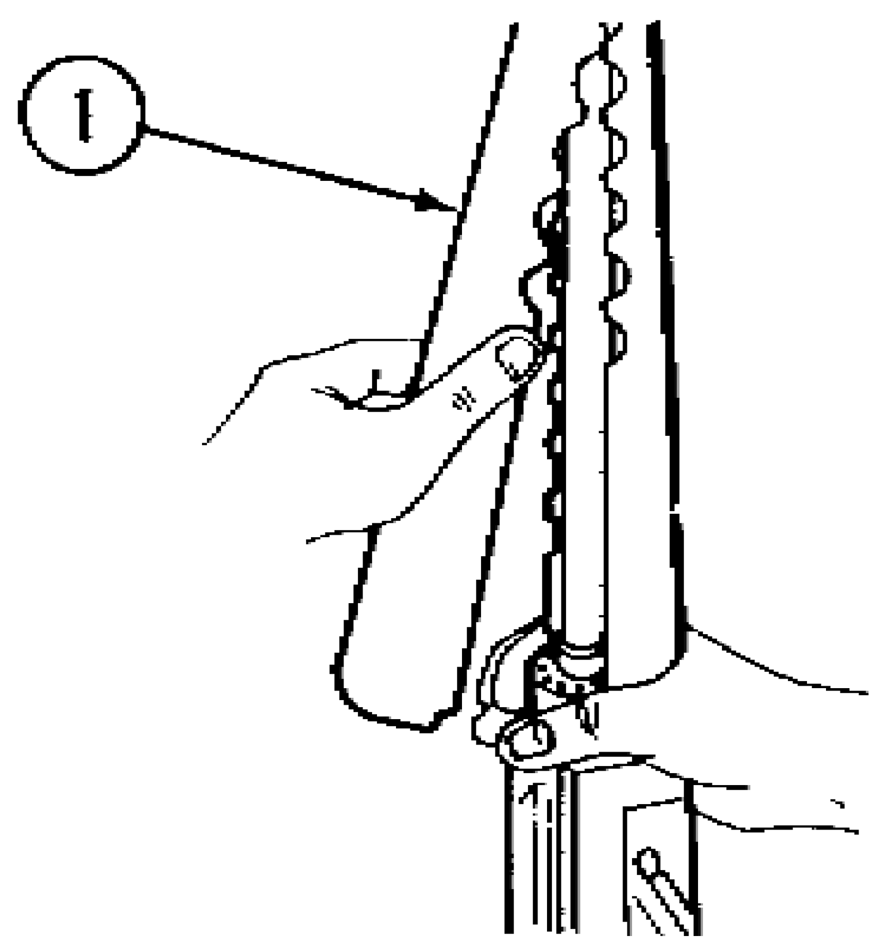
Item No.	Item To Be Inspected	Procedures

WARNING

Before starting an inspection, be sure to clear the rifle. Do not actuate the trigger until the rifle has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. Do not keep live ammunition near work area.

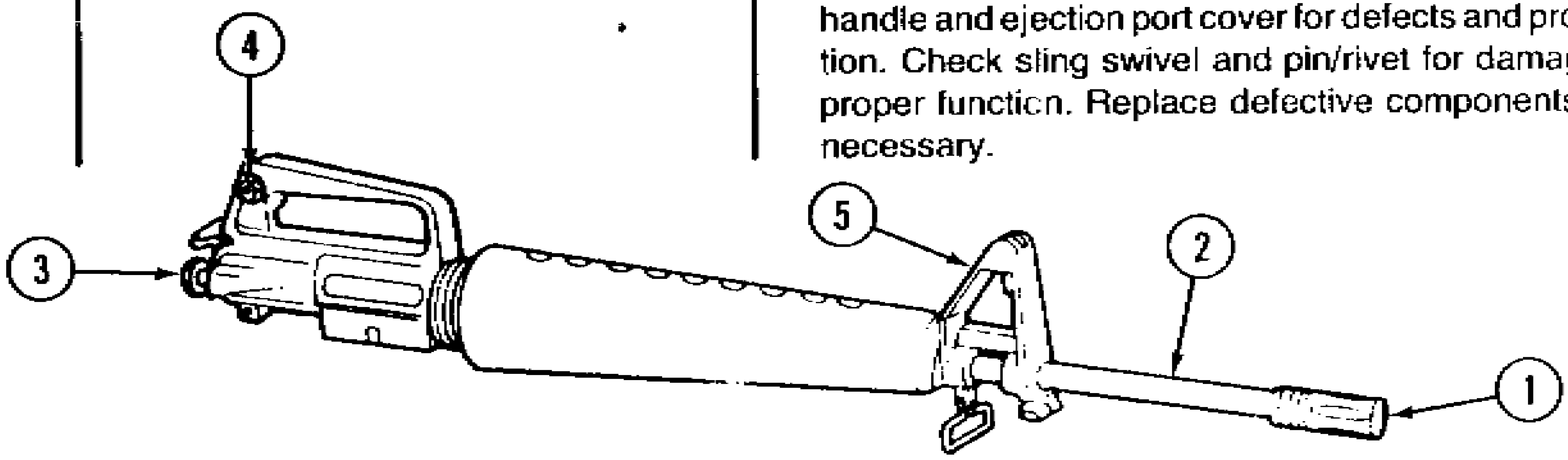
Item No.	Item To Be Inspected	Procedures
1	Cartridge magazine (1) (serviceability check) 	Disassemble. Inspect tube for bulges, dents, or damaged feeder lips. Inspect spring and follower for kinks or damage. Replace the magazine if any of the above conditions exist.

ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE (CONT)

Item No.	Item To Be Inspected	Procedures
		WARNING Do not interchange bolt assemblies or components from one weapon to another. Doing so may result in injury to, or death of, personnel.
2	Bolt carrier assembly and bolt assembly (serviceability check)  	Disassemble. Visually inspect bolt assembly (1) for cracks, especially in the area of the cam pin hole. Check for cracks on locking lugs, for a pitted or chipped bolt face, and for an elongated firing pin hole. If defects are found, evacuate to direct support maintenance for repair. Check for worn bolt rings. Insert the bolt assembly into the bolt carrier and exercise in and out to check for binding. Turn bolt carrier assembly (2) so the bolt assembly (3) points down. The bolt must not drop out. If the bolt assembly drops out of the bolt carrier due to its own weight, evacuate to support maintenance for repair (usually bolt ring replacement). Check extractor and spring and ejector and spring for serviceability. Check carrier key for damage and looseness. If bolt carrier or carrier key are damaged, evacuate to support maintenance. Clean ejector and spring. Lubricate and assemble or repair as necessary. Dented carrier keys may be repaired using the fabricated key tool (E-4, app E). See page E-3. **NOTE** Refer to TM 9-1005-249-10 for "buddy system" procedure on removing hand guards.
3	Upper receiver group (hand guards) 	Remove and inspect hand guards (1) internally and externally for cracks and/or damage. Cracks up to one inch in length are acceptable providing they do not adversely affect weapon operation. Discard and replace the hand guard (1) if: four or more tabs are missing, two adjacent tabs are missing, four rivets are missing, or the heatshield is loose enough to rattle.

ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE (CONT)

Item No.	Item To Be Inspected	Procedures
4	Upper receiver group (serviceability check)	Hand check flash suppressor (1) for looseness on barrel (2), then hand check barrel for looseness on upper receiver. Check gas tube, forward assist (3), and rear sight (4) for damage. The rear sight spring should retain the rear sight in either position with firmness. If any of the above are defective, evacuate to support maintenance. Check front sight plunger and spring (5) for damage and corrosion. Clean and lubricate them. Check charging handle and ejection port cover for defects and proper function. Check sling swivel and pin/rivet for damage and proper function. Replace defective components as necessary.



WARNING

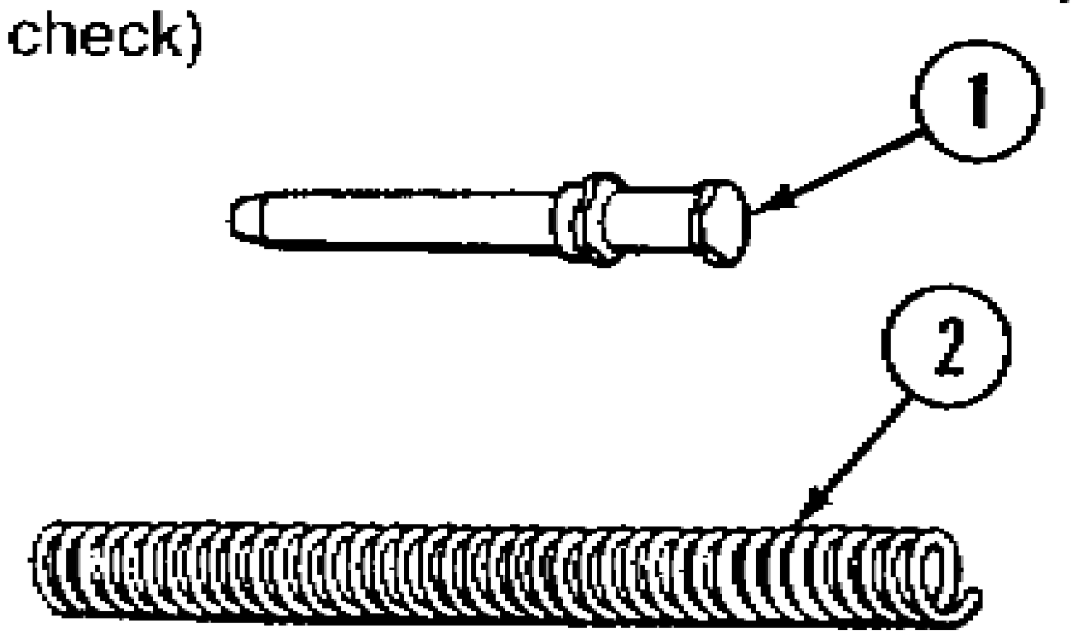
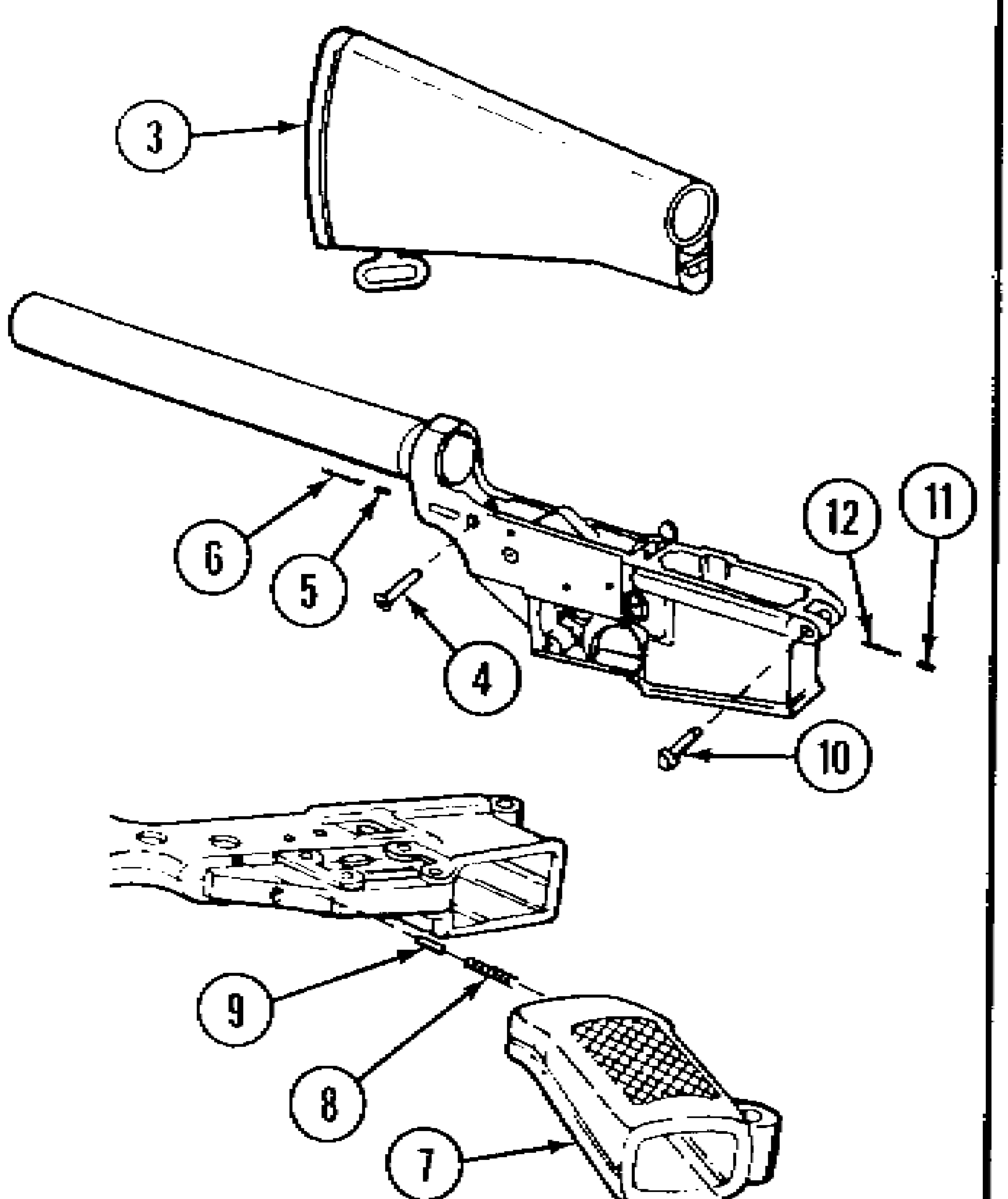
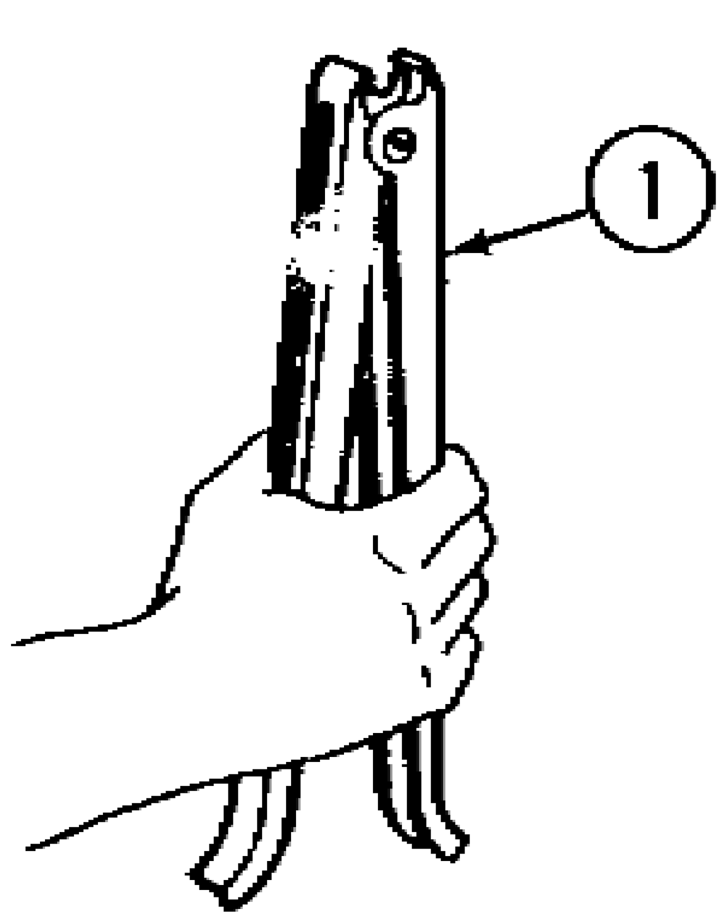
Dry cleaning solvent is flammable and toxic and should be used in a well-ventilated area. The use of rubber gloves is necessary to protect the skin when washing rifle parts.

CAUTION

Do not use wire brush to roughen surfaces. Use a well-ventilated area during cleaning and application of solid film lubricant. If solid film lubricant comes in contact with recoiling parts or functioning surfaces of the rifle, remove lubricant immediately by washing with dry cleaning solvent.

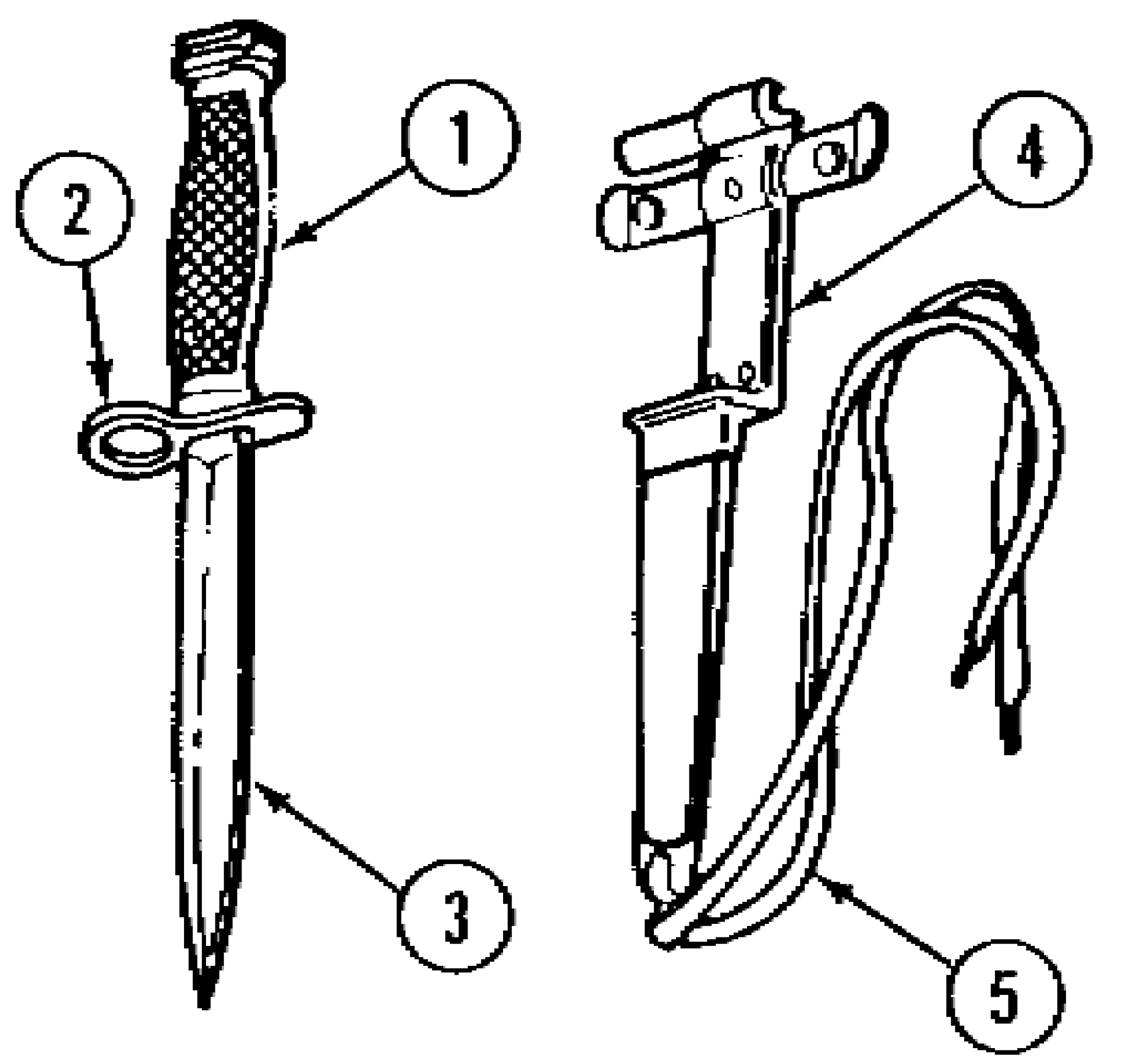
Item No.	Item To Be Inspected	Procedures
		Inspect upper receiver finish. If scratched or worn shiny in spots, disassemble and remove all lubricant from surface with dry cleaning solvent (item 9, app D). Wear rubber gloves (item 10A, app D) and use a wash pan (item 13A, app D) to apply solvent. Let parts dry thoroughly. Roughen the surface using abrasive cloth (item 6, app D) and apply solid film lubricant (item 13, app D). Allow 16 to 24 hours to dry before handling. Release takedown pin and open receivers. Hold barrel at 40-degree angle (muzzle down). Pull charging handle to rear. Hold bolt carrier to rear and push charging handle forward. Release bolt carrier. The bolt carrier should close and lock under its own weight. If it does not, remove the bolt from the carrier and slide the carrier and key assembly (without bolt) back and forth in the upper receiver and barrel assembly. If the gas tube hits the carrier key, or if the gas tube binds in the carrier key, try to correct the malfunction by adjusting (slightly bending) the gas tube slightly in the area of the hand guards. If this does not correct the malfunction, evacuate to support maintenance.

ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE (CONT)

Item No.	Item To Be Inspected	Procedures
5	Lower receiver group (serviceability check)  	Remove buffer (1) and action spring (2). Check buffer for cracks. Replace if cracked. Check action spring for kinks and free length. Free length should be 11 3/4 min to 13 1/2 max inches; if not, replace. Do not attempt to adjust the length. Remove butt cap screws and shoulder gun stock assembly (3), taking care not to lose the takedown pin (4), detent (5), and spring (6). Clean and lubricate the takedown pin, detent, spring, and hole in the receiver. Check shoulder gun stock assembly components and buttstock for damage. Replace damaged components as necessary. Cracked buttstock can be repaired at support maintenance. Hand check lower receiver extension for looseness and corrosion. If loose, evacuate to support maintenance. Clean and lubricate the extension. Remove rifle grip (7), spring (8), and safety detent (9). Clean and lubricate pivot pin (10), detent (11), spring (12) and receiver holes. Replace defective components as necessary. Function check the magazine catch, bolt catch, automatic sear, hammer, trigger, and disconnectors. If defective, evacuate to support maintenance. Check lower receiver finish. If scratched or worn shiny in spots, repair in the same manner as outlined for upper receiver.
6	Bipod assembly M3 (serviceability check) 	Check spring tension for retention to rifle barrel. Check legs (1) for damage. If defective, replace.

ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES QUARTERLY SCHEDULE (CONT)

Item No.	Item To Be Inspected	Procedures
7	Bayonet and scabbard (serviceability check)	Remove grips (1) clean and lubricate the bayonet. Check release for retention and release on rifle bayonet lug (2). Bayonet blade (3) should not be broken and blade should be free of nicks. Blades with blunt points and any nicks will be restored by stoning. Check scabbard (4) for cracks, splits, worn fabric, and missing thong (5).



NOTE

During periods of inactivity, perform preventive maintenance quarterly unless inspection reveals more frequent servicing is necessary.

An inactive weapon is a weapon which has been stored in an arms room for a period of 90 days without use. The weapon may or may not have been assigned to an individual.

Normal cleaning (PMCS) of an inactive weapon will be performed every 90 days. Should the unit armorer detect corrosion on a weapon prior to the end of the 90-day period, the PMCS should be performed immediately.

Section IV. TROUBLESHOOTING

2-8. GENERAL.

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the 5.56-mm Rifle M16 and M16A1. Each malfunction for the individual part or assembly is followed by a list of tests or inspections which will help you to determine the corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, see individual repair sections for maintenance instructions on each major assembly.

2-9. TROUBLESHOOTING PROCEDURES. Refer to troubleshooting table for malfunctions, tests, and corrective actions. The symptom index is provided for a quick reference of symptoms covered in the table.

SYMPTOM INDEX

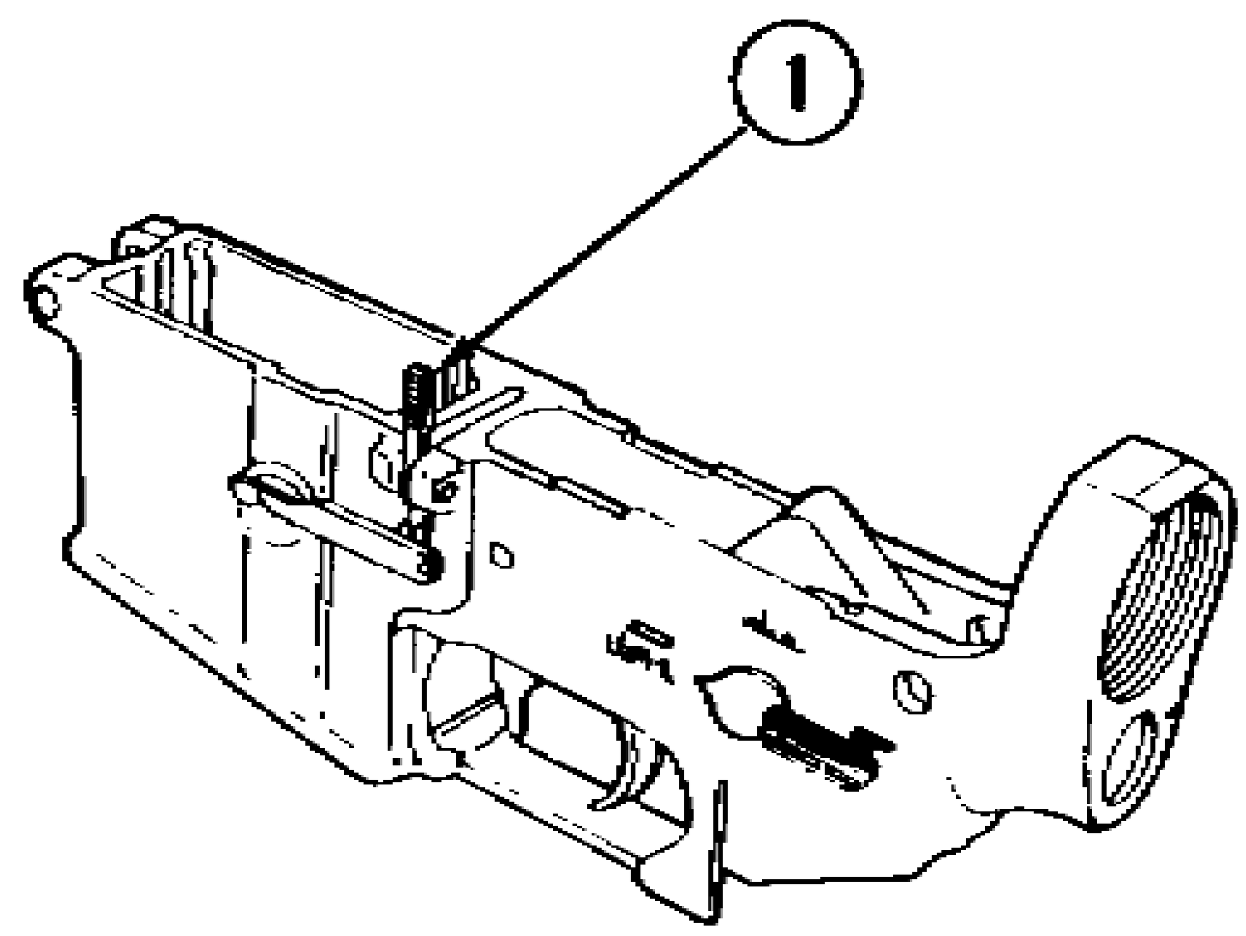
TROUBLESHOOTING

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. BOLT FAILS TO LOCK TO REAR AFTER FIRING LAST ROUND.

Step 1. Broken bolt catch (1) and/or spring.

Evacuate to direct support maintenance.



Step 2. Magazine follower (2) worn or broken.

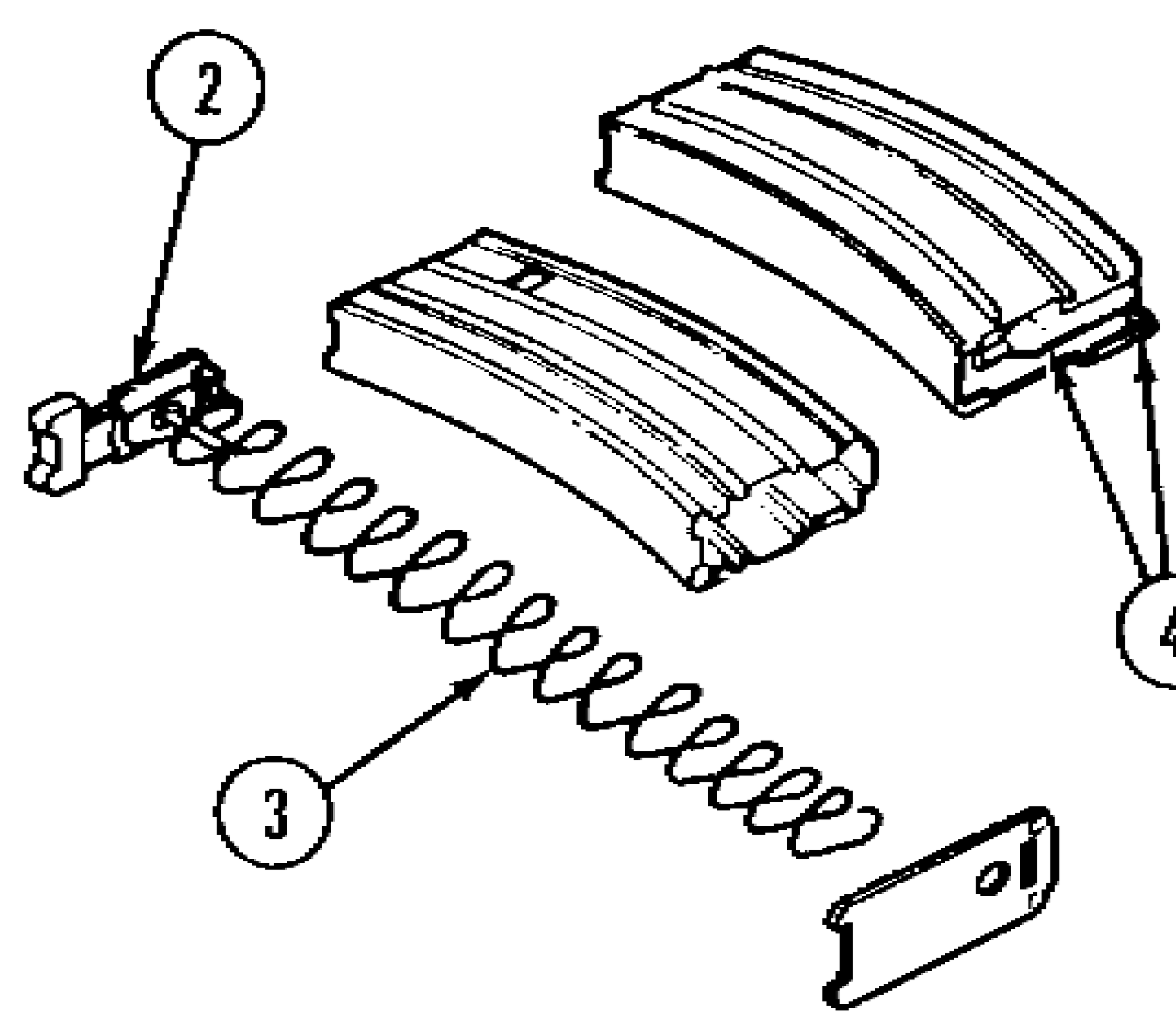
Replace magazine.

Step 3. Magazine spring (3) weak or broken.

Replace magazine.

Step 4. Magazine feeder lips (4) bent or broken.

Replace magazine.



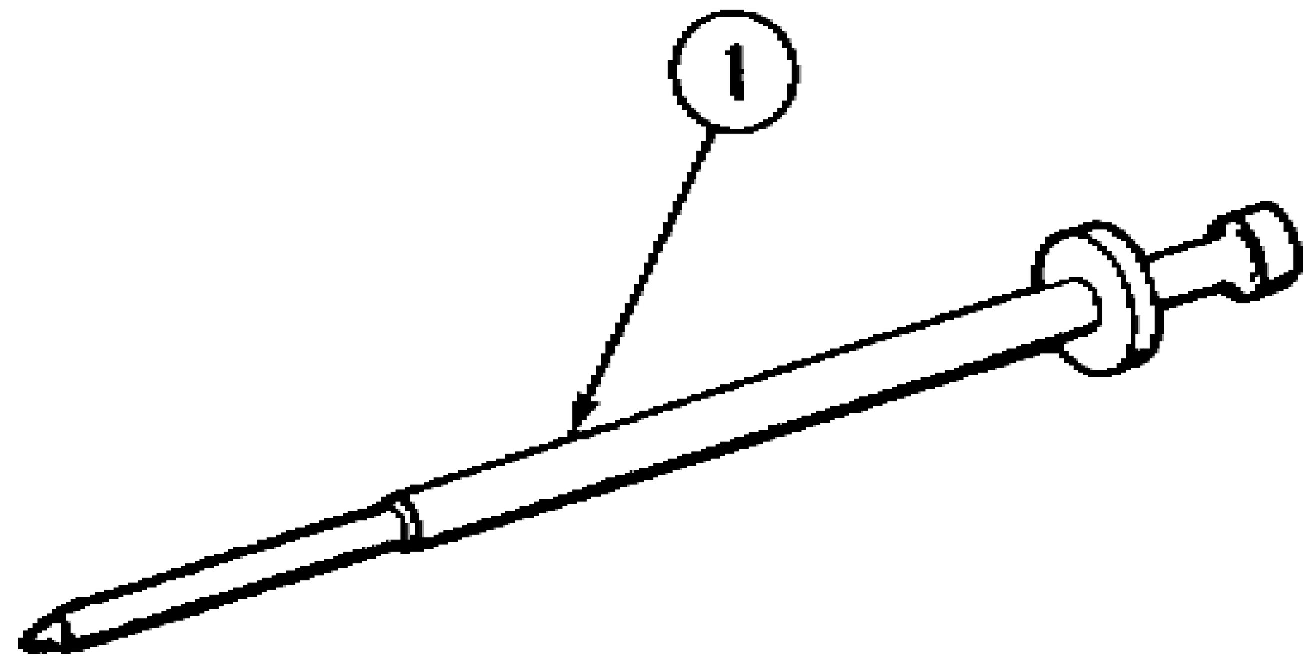
TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

2. FAILURE TO FIRE.

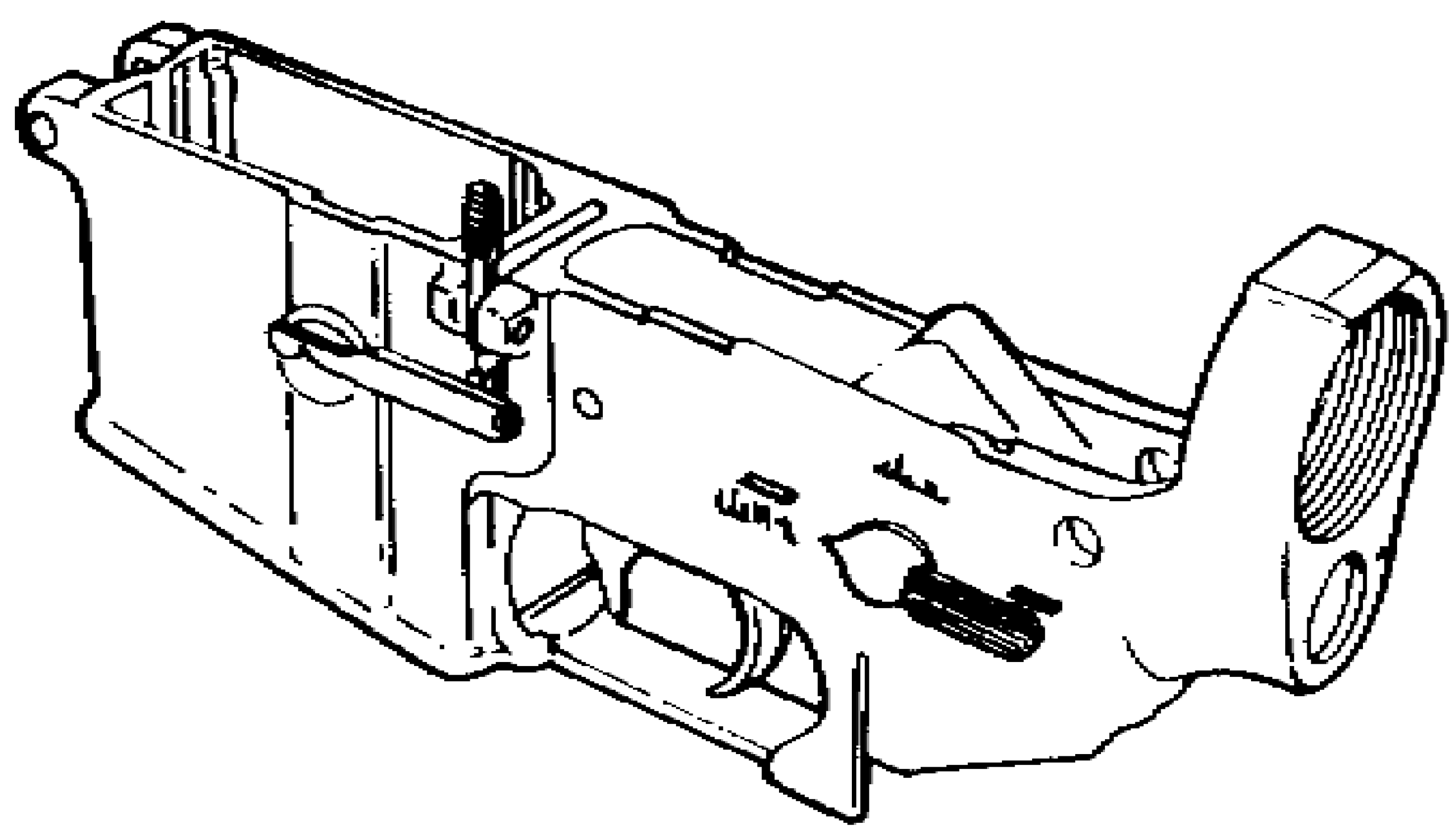
Step 1. Broken firing pin (1).

Evacuate to direct support maintenance.



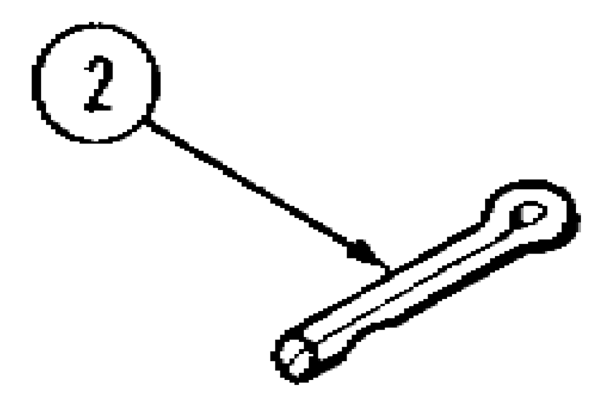
Step 2. Firing mechanism and/or lower receiver improperly assembled or has worn, broken, or missing parts.

Evacuate to direct support maintenance.



Step 3. Broken or defective retaining pin (2).

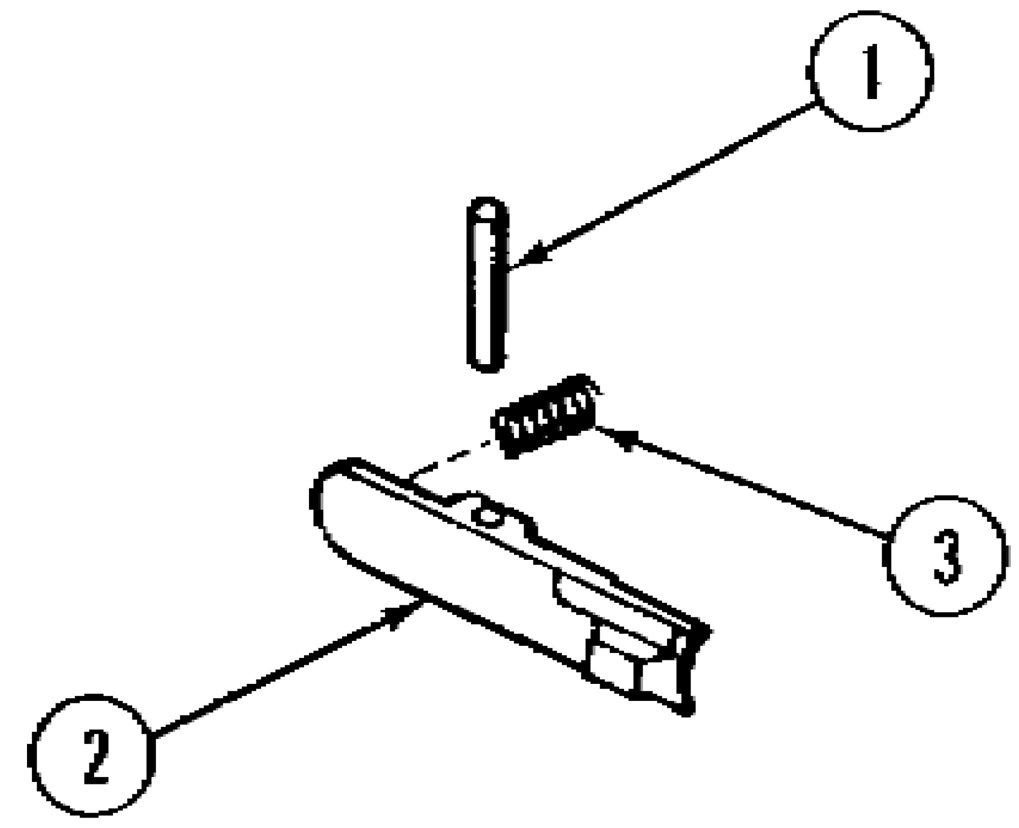
Replace.



3. FAILURE TO EXTRACT.

Step 1. Defective extractor pin (1), extractor (2), and/or extractor spring assembly (3).

Replace extractor pin (1), extractor (2), and/or extractor spring assembly (3) (p 2-21).



Step 2. Short recoil.

Refer to page 2-12.

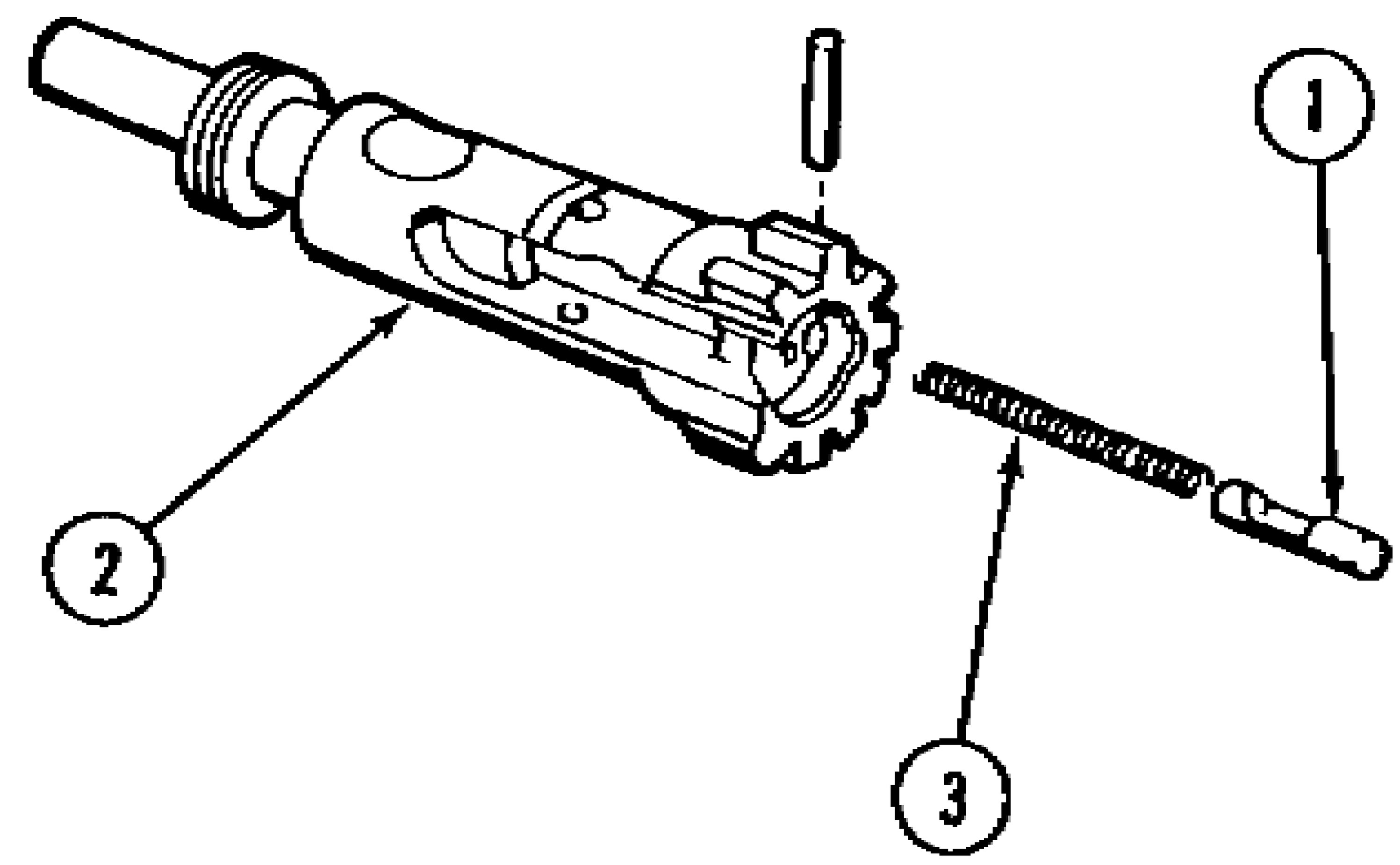
TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

4. FAILURE TO EJECT.

Step 1. Broken ejector (1).

Replace (p 2-22).



Step 2. Ejector (1) stuck in bolt body (2).

Disassemble and clean.

Step 3. Weak or broken ejector spring (3).

Replace (p 2-22).

Step 4. Short recoil.

Refer to page 2-12.

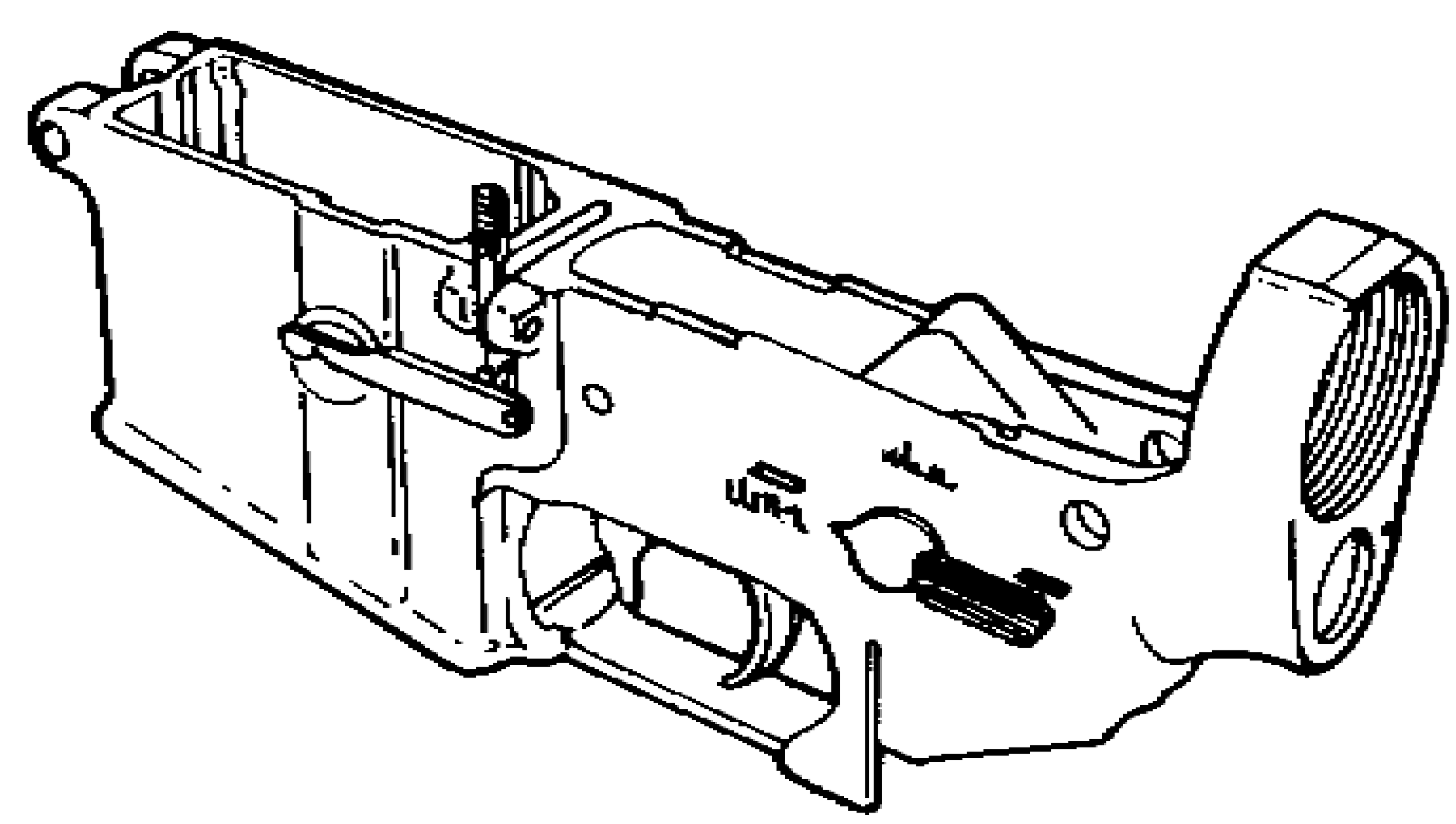
5. FAILURE TO COCK.

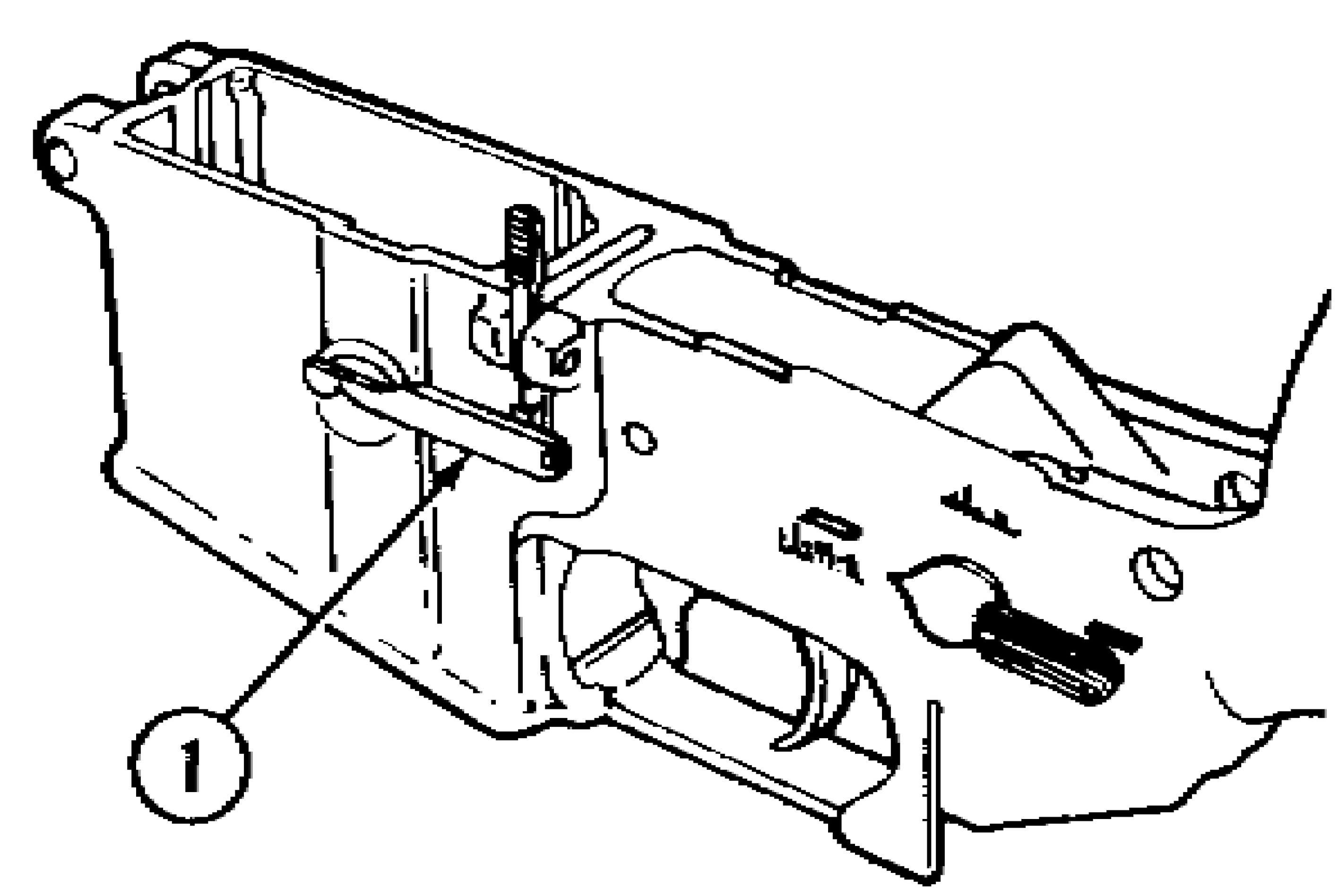
Step 1. Worn, broken, or missing parts of firing mechanism.

Evacuate to direct support maintenance.

Step 2. Short recoil.

Refer to page 2-12.





6. FAILURE TO FEED.

Step 1. Magazine catch spring weak or broken.

Evacuate to direct support maintenance.

Step 2. Magazine catch (1) defective.

Evacuate to direct support maintenance.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

Step 3. Magazine catch notch (2) defective.

Replace magazine assembly.

Step 4. Magazine lips (3) burred or broken.

Replace magazine.

Step 5. Magazine follower (4) defective.

Replace magazine.

Step 6. Magazine spring weak (5) or broken.

Replace magazine.

Step 7. Magazine tube (6) dented.

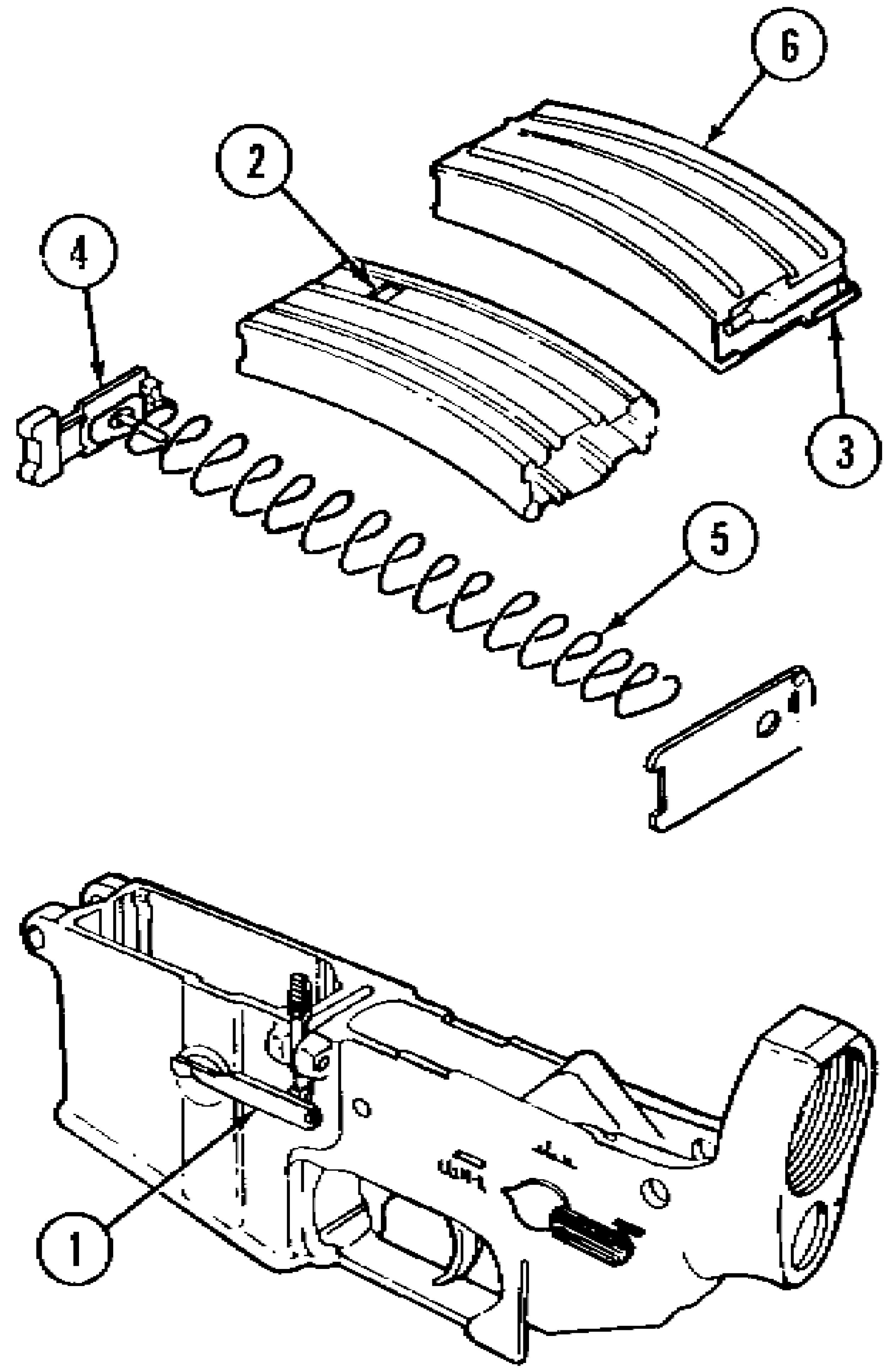
Replace magazine.

Step 8. Magazine catch (1) out of adjustment (will not retain magazine).

Refer to page 3-61.

Step 9. Short recoil.

Refer to page 2-12.



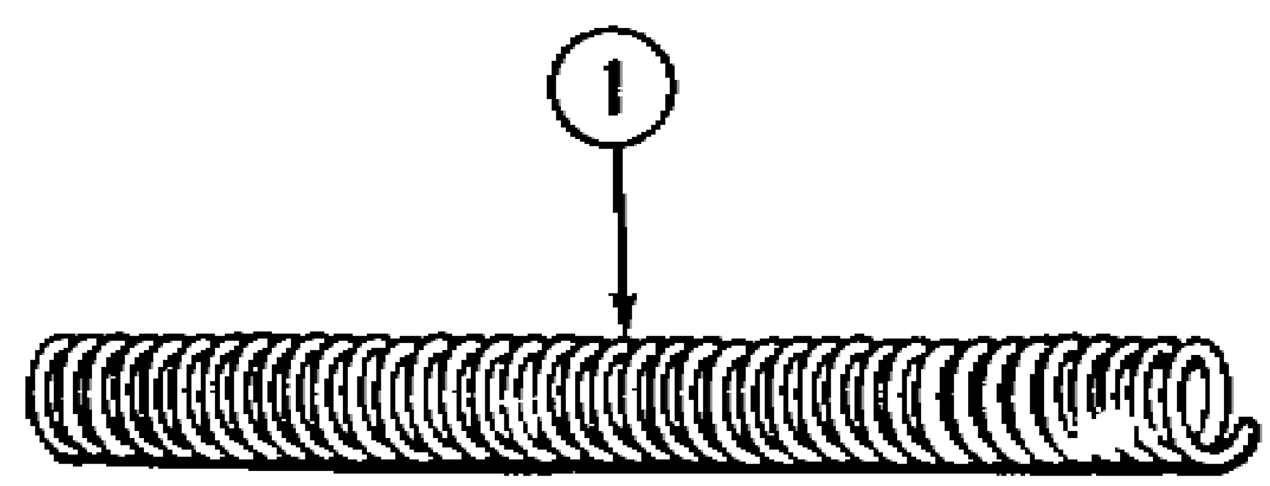
7. FAILURE TO CHAMBER.

Step 1. Weak or broken action spring (1) (free length 11 3/4 inches minimum to 13 1/2 inches maximum.

Replace action spring (1) (p 2-38).

Step 2. Short recoil.

Refer to page 2-12.



TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

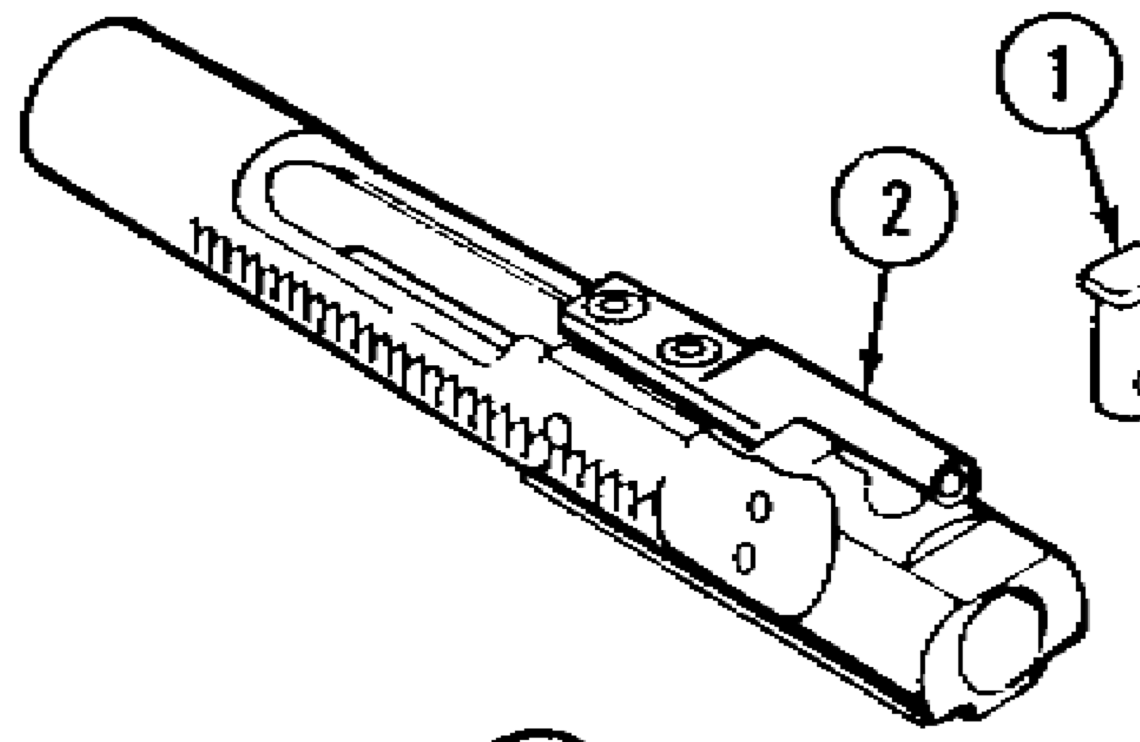
8. FAILURE TO LOCK.

Step 1. Bolt cam pin (1) missing.

Replace (p 2-17).

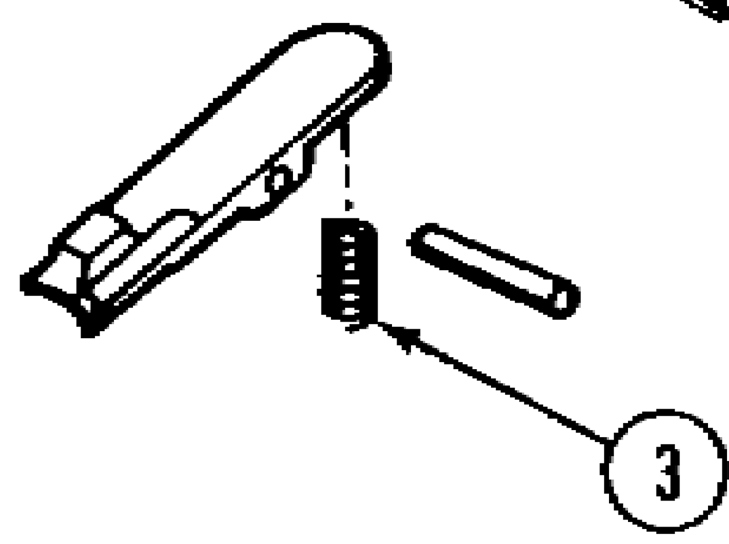
Step 2. Loose or damaged bolt carrier key (2).

Evacuate to direct support maintenance.



Step 3. Improperly assembled extractor spring assembly (3).

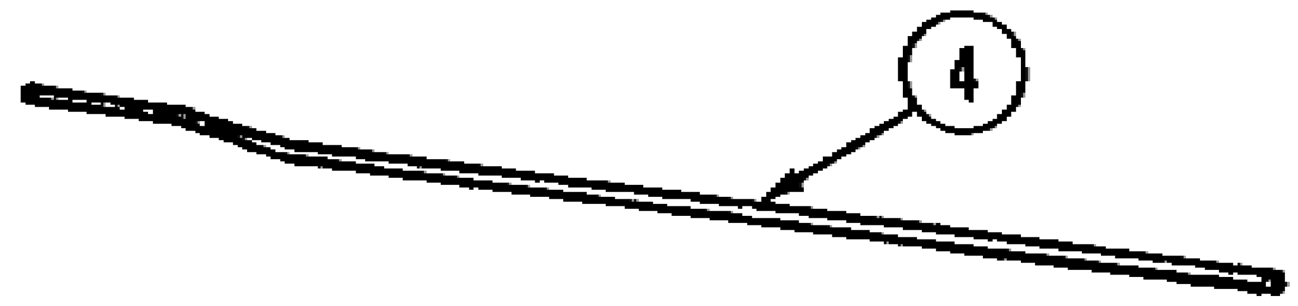
Assemble correctly (p 2-21).



Step 4. Bent gas tube (4).

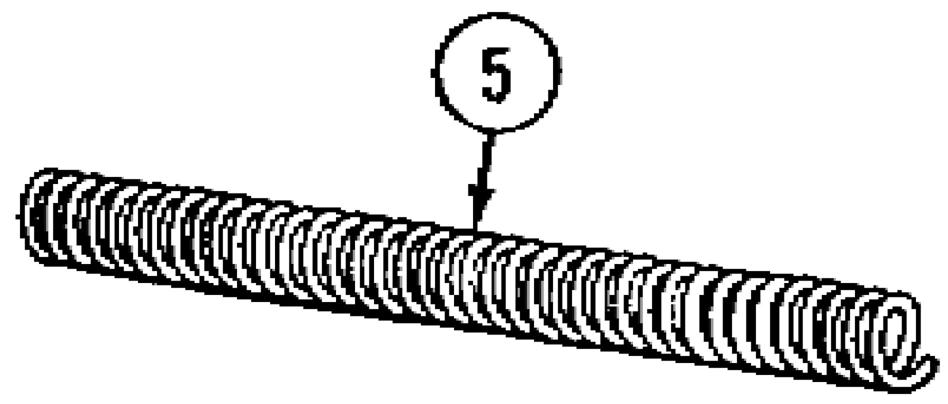
Adjust by bending in area of hand guard.

Evacuate to direct support maintenance.



Step 5. Weak or broken action spring (5).

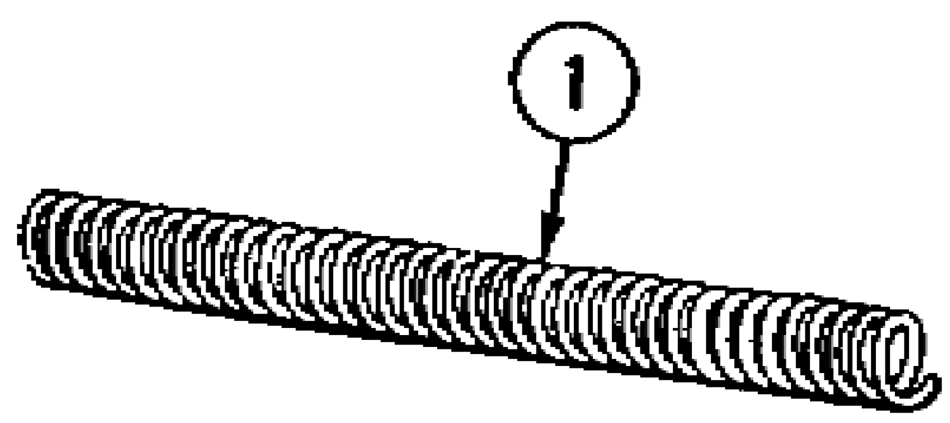
Replace action spring (5) (p 2-38).



9. SHORT RECOIL.

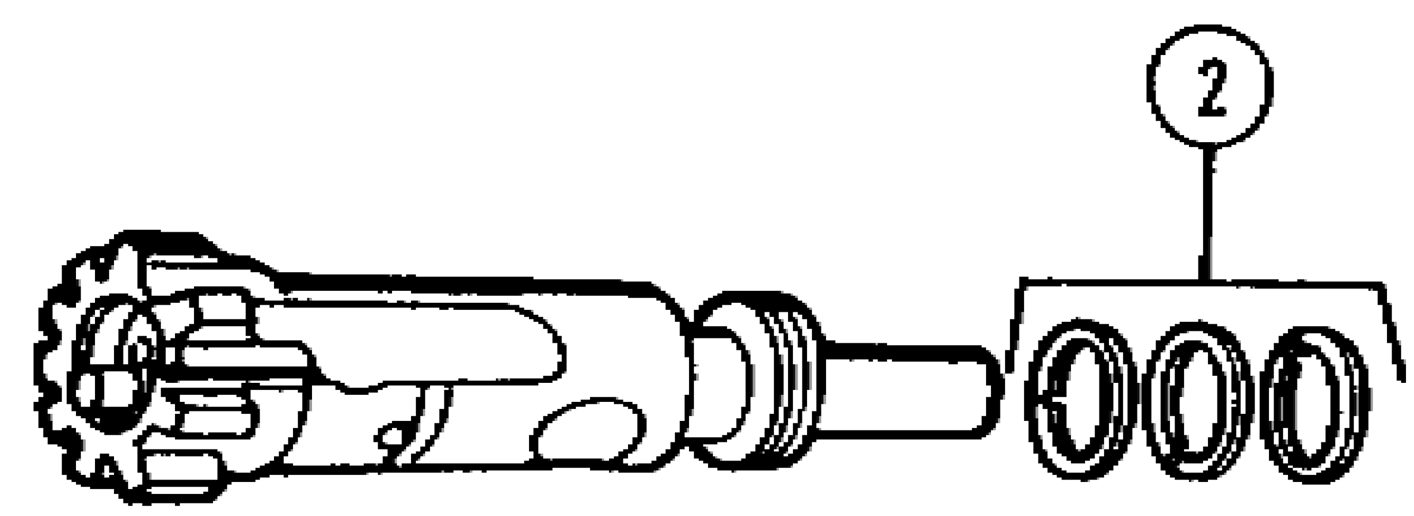
Step 1. Weak or broken action spring (1).

Replace action spring (1) (p 2-38).



Step 2. Improper gap space or worn, missing, or broken bolt rings (2).

Evacuate to direct support maintenance if rings are worn, broken or missing (p 2-18).



TROUBLESHOOTING (CONT)

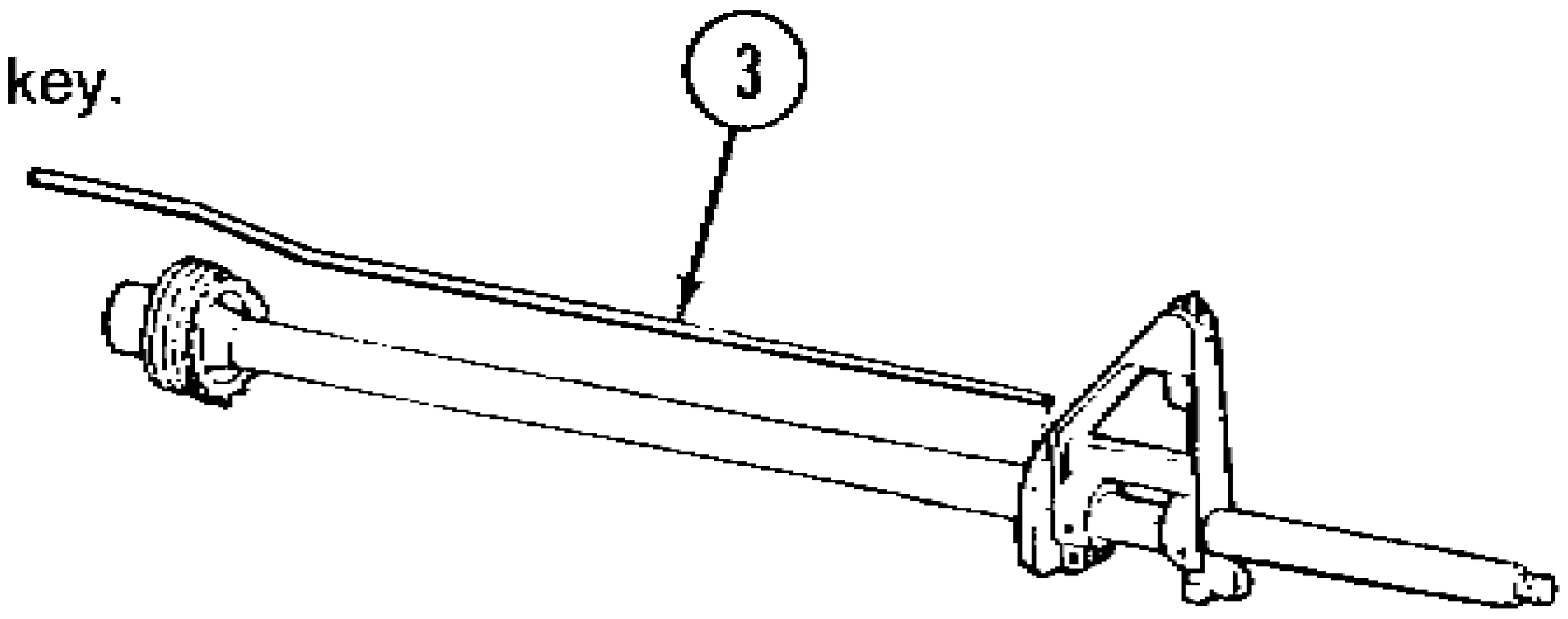
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

Step 3. Gas leakage caused by broken or loose gas tube (3) around front sight base.

Evacuate to direct support maintenance.

Step 4. Improper alinement of gas tube and carrier key.

Refer to page 2-19.



10. FAILURE TO CYCLE WITH SELECTOR LEVER SET ON AUTO.

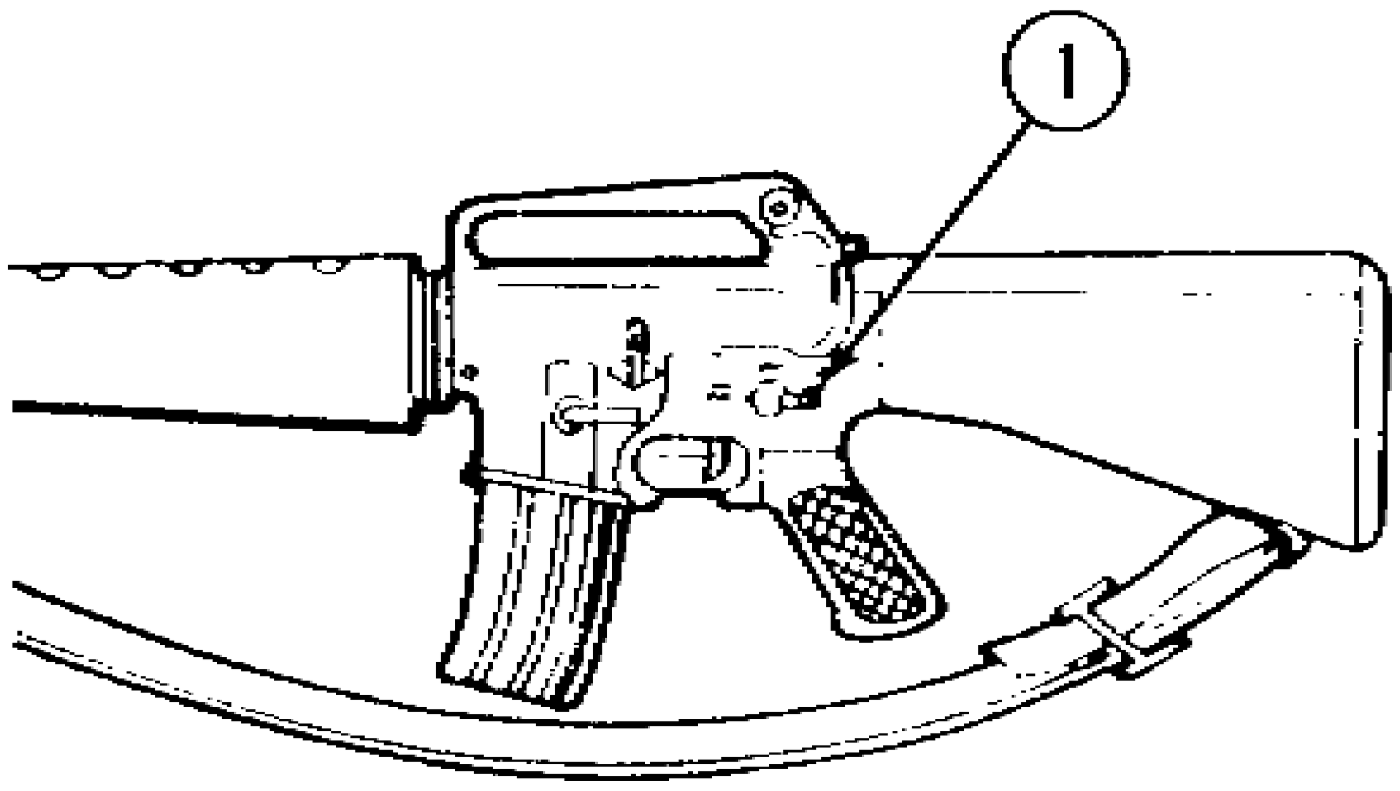
Faulty selector lever (1).

Evacuate to direct support maintenance.

11. FIRES WITH SELECTOR LEVER (1) ON SAFE OR WHEN TRIGGER IS RELEASED WITH SELECTOR LEVER ON SEMI.

Worn, broken, or missing parts of firing mechanism.

Evacuate to direct support maintenance.



12. FIRES TWO ROUNDS WITH ONE SQUEEZE OF TRIGGER WITH SELECTOR LEVER (1) SET ON SEMI (DOUBLE FIRING).

Perform function test.

If any part of function test (page 2-44) fails, evacuate to direct support maintenance.

Section V. DECONTAMINATION OF RIFLES AND ARMS ROOMS

2-10. DECONTAMINATION OF SIGHTS ACTIVATED WITH TRITIUM (H 3).

a. *Identification.* Tritium sights will be marked with the assembly date and the radiation symbol and stamped H 3, 9 mc.

b. *Damage Determination.* Evidence of a break in the glass container for the H 3 will be a lack of illumination (assuring the expiration date for the sight has not been exceeded). Radiation from the sight is extremely low and CANNOT be detected with standard issue radiation detectors, i.e., AN/PDR-27.

c. *Contamination.* The tritium isotope used in the low light level sight is in a gaseous state and will rapidly diffuse into the atmosphere in the event of breakage. Very little residual contamination should be left on the rifle. All illumination will cease upon loss of H 3 gas.

WARNING

Dry cleaning solvent is flammable and toxic and should be used in a well-ventilated area. The use of rubber gloves is necessary to protect the skin when washing rifle parts.

d. *Decontamination.* When a broken sight is found, the sight MUST be removed and turned in for disposal in accordance with AR 385-11. After removing the sight, the rifle should be cleaned with dry cleaning solvent (item 9, app D). Wear rubber gloves (item 10A, app D) and use a wash pan (item 13A, app D) to apply solvent. Let dry, then lubricate with cleaner, lubricant and preservative (CLP) (item 5, app D).

e. *Requirements.* Because of its small volume of gas and its low energy of emitted radiation, H 3 does not pose a health hazard to the user. Current Army regulations NRC license conditions and Title 10, Code of Federal Regulations, Part 20 require that the above actions be carried out.

2-11. DECONTAMINATION OF SIGHTS ACTIVATED WITH PROMETHIUM (Pm 147).

NOTE

Pm 147 is no longer available for issue. It is being replaced with tritium (H 3).

a. *General.* When a sight activated with promethium (Pm 147) is found, the sight MUST be removed and turned in for disposal in accordance with AR 385-11. Contact the local RPO.

b. *Identification.* Promethium sights are marked with the assembly date, the radiation symbol, and Pm 147, 1 mc.

c. *Decontamination.* If a sight activated with promethium (Pm 147) is found, conduct a survey under the direction of the local RPO. Decontaminate as required in accordance with local procedures.

Section VI. MAINTENANCE PROCEDURES

2-12. INITIAL SETUP. The following will reduce the space required for the initial setup portion of the maintenance procedures.

a. Resources required are not listed unless they apply to the procedure.

b. Personnel Required is listed only if the task requires more than one person. If Personnel Required is not listed, it means one person can do the job.

c. This manual covers two different models. If the maintenance task is applicable to both models, *Applicable Configuration* will not be listed.

d. The normal standard equipment condition is that the item is removed from end item or next higher assembly and is in the assembled condition. *Equipment Condition* is not listed unless some other condition is required.

e. The approximate time required is listed on the applicable Maintenance Allocation Chart (MAC).

2-13. MAJOR COMPONENTS OF M16/16A1 RIFLE.

This task covers disassembly.

INITIAL SETUP

References
TM 9-1005-249-10

Equipment Condition
Weapon assembled.

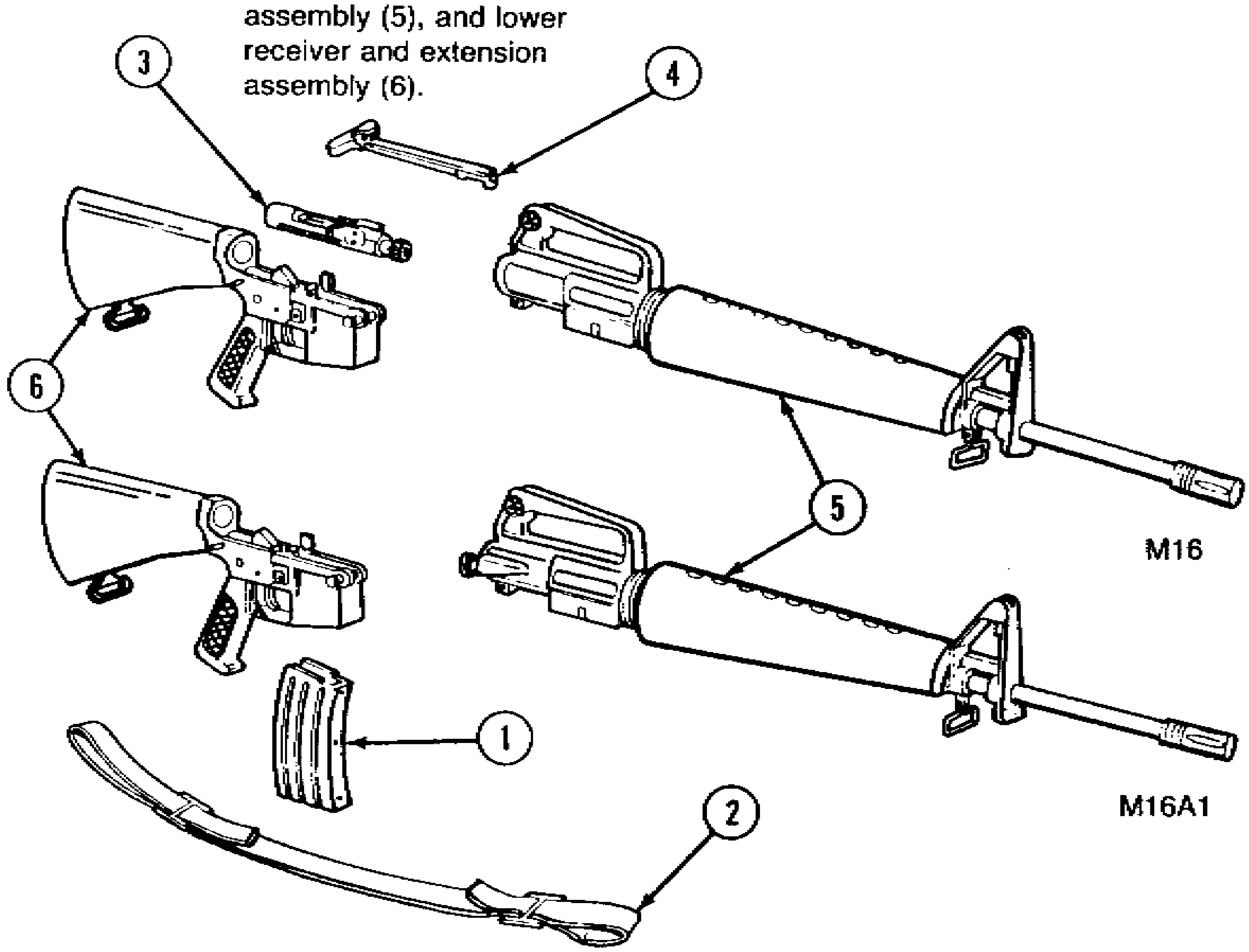
General Safety Instructions
Before starting an inspection, be sure to clear the weapon. Do not keep live ammunition near the work area.

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

Before starting an inspection on a weapon equipped with a low light level sight, check for damage to the sight and decontaminate if required. See procedures on page 2-14.

Do not interchange bolt assemblies or components from one weapon to another. Doing so may result in injury to, or death of, personnel.

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Weapon	Cartridge magazine (1), small arms sling (2), bolt carrier assembly (3), charging handle assembly (4), upper receiver and barrel assembly (5), and lower receiver and extension assembly (6).	Remove.	Refer to TM 9-1005-249-10.



2-14. BOLT CARRIER ASSEMBLY.

This task covers:

a. Disassembly
b. Cleaning
c. Inspection
d. Repair
e. Lubrication
f. Reassembly

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)
Key tool (E-4, app E)

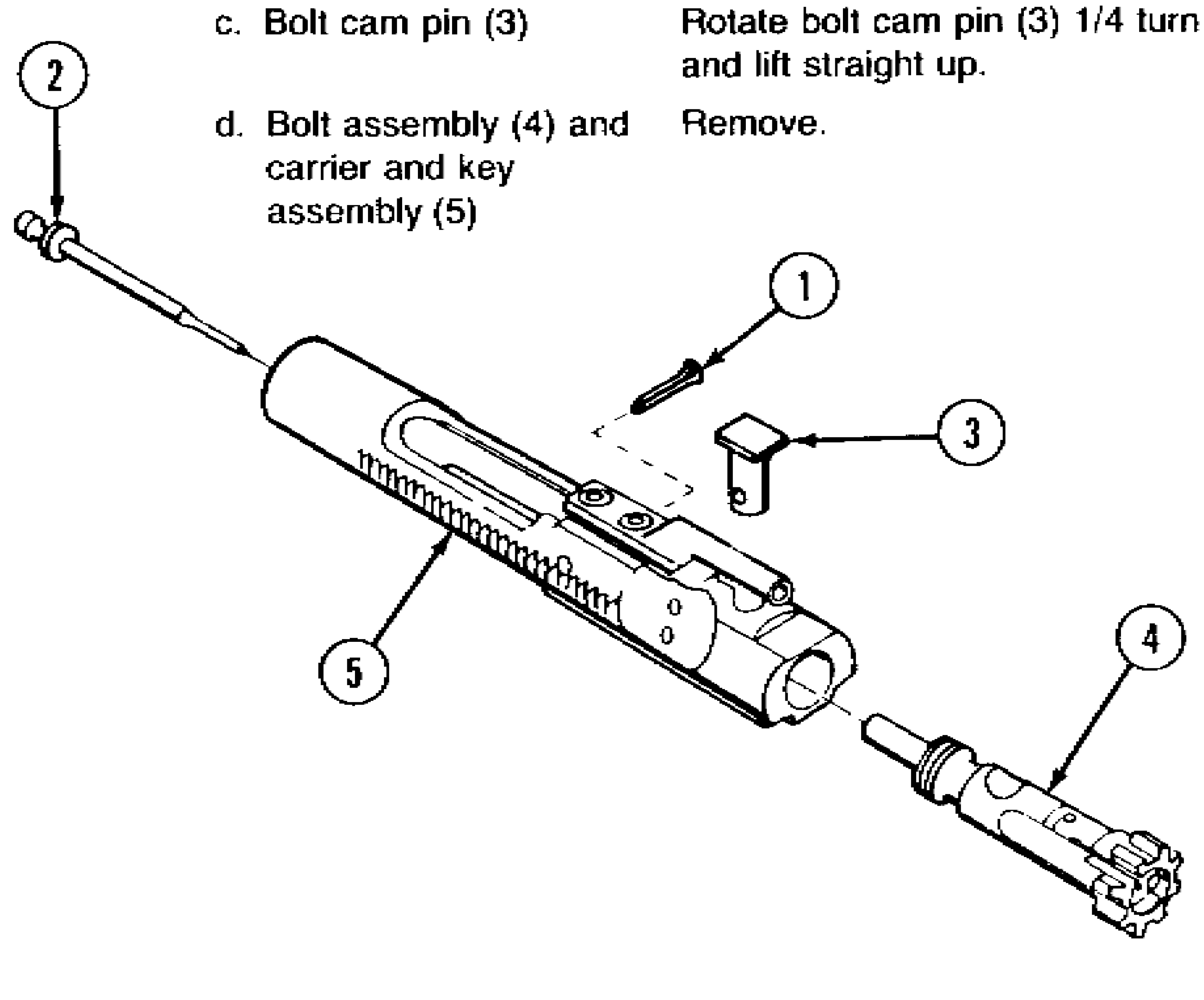
Materials/Parts
Cleaner, lubricant and preservative (CLP)
(item 5, app D)

References
TM 9-1005-249-10

General Safety Instructions
Bolt cam pin must be installed or weapon will blow up while firing the first round. If the bolt cam pin is not installed, injury to, or death of, personnel may result.

Do not interchange bolt assemblies or components from one weapon to another. Doing so may result in injury to, or death of, personnel.

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Bolt Carrier Assembly	a. Firing pin Retaining pin (1)	Remove.	Do not spread or close legs of firing pin retaining pin (1).
	b. Firing pin (2)	Catch firing pin (2) as it drops out.	
	c. Bolt cam pin (3)	Rotate bolt cam pin (3) 1/4 turn and lift straight up.	
	d. Bolt assembly (4) and carrier and key assembly (5)	Remove.	For disassembly see page 2-16.



2-14. BOLT CARRIER ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
CLEANING			
Bolt Carrier Assembly	All items	Remove carbon using CLP (item 5, app D).	
INSPECTION			
Bolt Carrier Assembly	a. Bolt assembly	Check for worn rings by holding the bolt carrier assembly with the bolt assembly down. Check ring spacing.	If bolt assembly falls out of carrier after retaining pin and cam pin are removed, the rings are worn. Notify support maintenance.
	b. All items	Check for serviceability.	
REPAIR			
Bolt Carrier Assembly	a. Firing pin retaining pin and cam pin	Replace if unserviceable.	Items are unserviceable if cracked or mutilated.
	b. Bolt assembly		See pages 2-21 and 2-22.
	c. Firing pin	Notify support maintenance if unserviceable.	Firing pin is unserviceable if broken or if tip is mutilated.

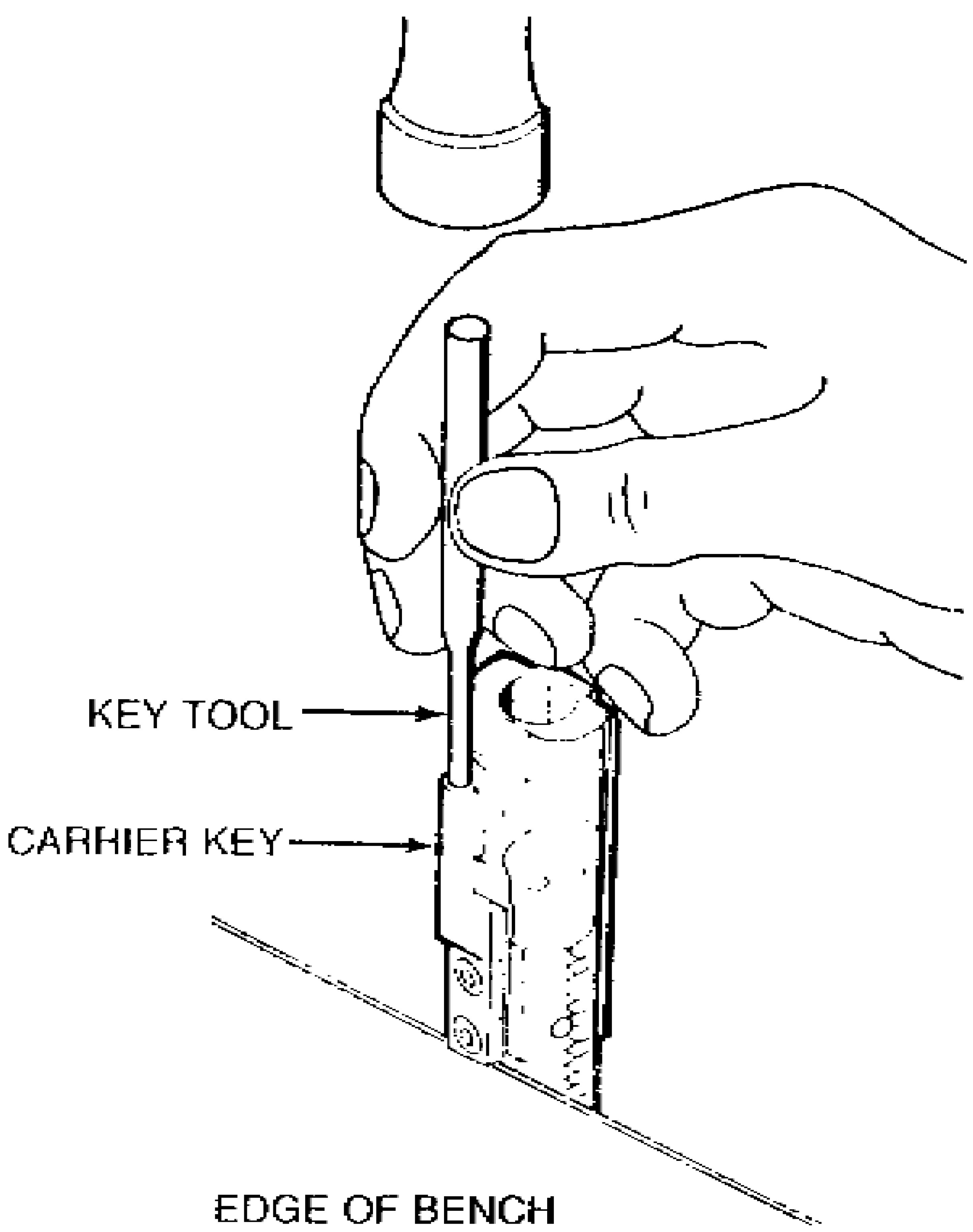
CAUTION

Extreme care must be exercised during the following procedure to assure that the striking force is not directed to the attaching screws and that the tube portion is not enlarged or flared beyond original requirements as such enlargement would permit loss of gas pressure when the key and gas tube come together during function.

LOCATION	ITEM	ACTION	REMARKS
	d. Carrier key	Repair small dents and/or distortions using fabricated key tool (E-4, app E) as follows:	

LOCATION	ITEM	ACTION	REMARKS

REPAIR (CONT)



Place the key and bolt carrier assembly in a vertical position, supported in a manner that contact is made with the rear surface of the key.

Insert the small end of the key tool (E-4, app E) into the tube portion of the key.

Strike the large end of the key tool (E-4, app E) lightly with a 3-ounce, soft-brass hammer.

Repeat striking (gently) until the carrier key is reformed to original configuration.

LUBRICATION

LOCATION	ITEM	ACTION	REMARKS
Bolt Carrier Assembly	All items	Lubricate using CLP (item 5, app D).	

REASSEMBLY

WARNING

Do not interchange bolt assemblies or components from one weapon to another. Doing so may result in injury to, or death of, personnel.

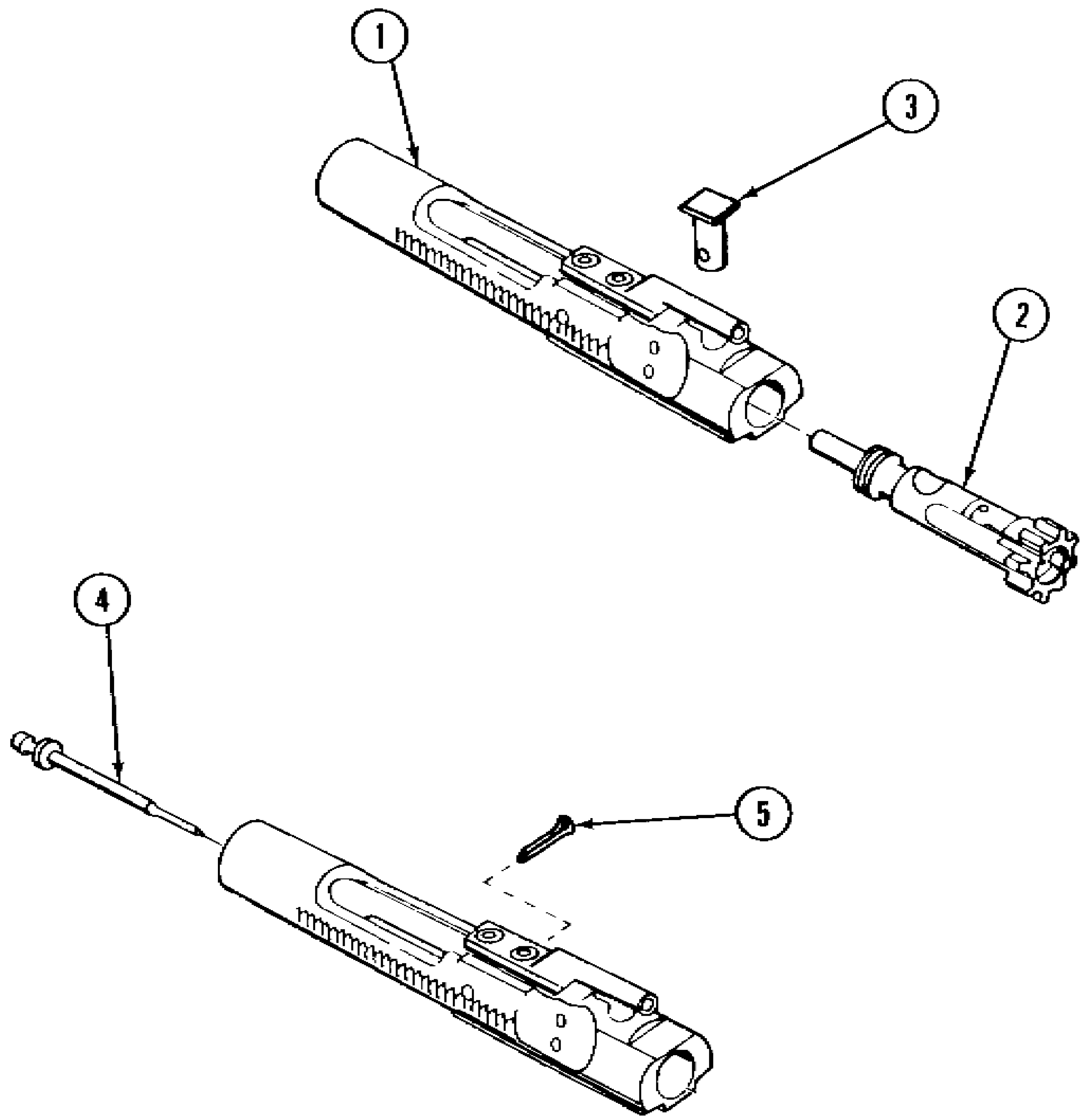
Bolt cam pin must be installed or weapon will blow up while firing the first round. If the cam pin is not installed, injury to, or death of, personnel may result.

2-14. BOLT CARRIER ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY (CONT)

LOCATION	ITEM	ACTION	REMARKS
Bolt Carrier Assembly	a. Key and bolt carrier assembly (1), bolt assembly (2), and bolt cam pin (3)	Install bolt in carrier and key and secure with cam pin.	Before installing bolt assembly, check to see that the ring gaps are staggered to prevent loss of gas pressure.
	b. Firing pin (4), and firing pin retaining pin (5)	Install.	Firing pin retaining pin must be installed from the left side only.



2-15. BOLT ASSEMBLY.

This task covers:

a. Disassembly
b. Cleaning
c. Lubrication
d. Repair
e. Reassembly

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19201)

Materials/Parts
Cleaner, lubricant and preservative (CLP) (item 5, app D)

References
TM 9-1005-249-10

General Safety Instructions
Do not interchange bolt assemblies or other components from one weapon to another. Doing so may result in injury to, or death of, personnel.

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

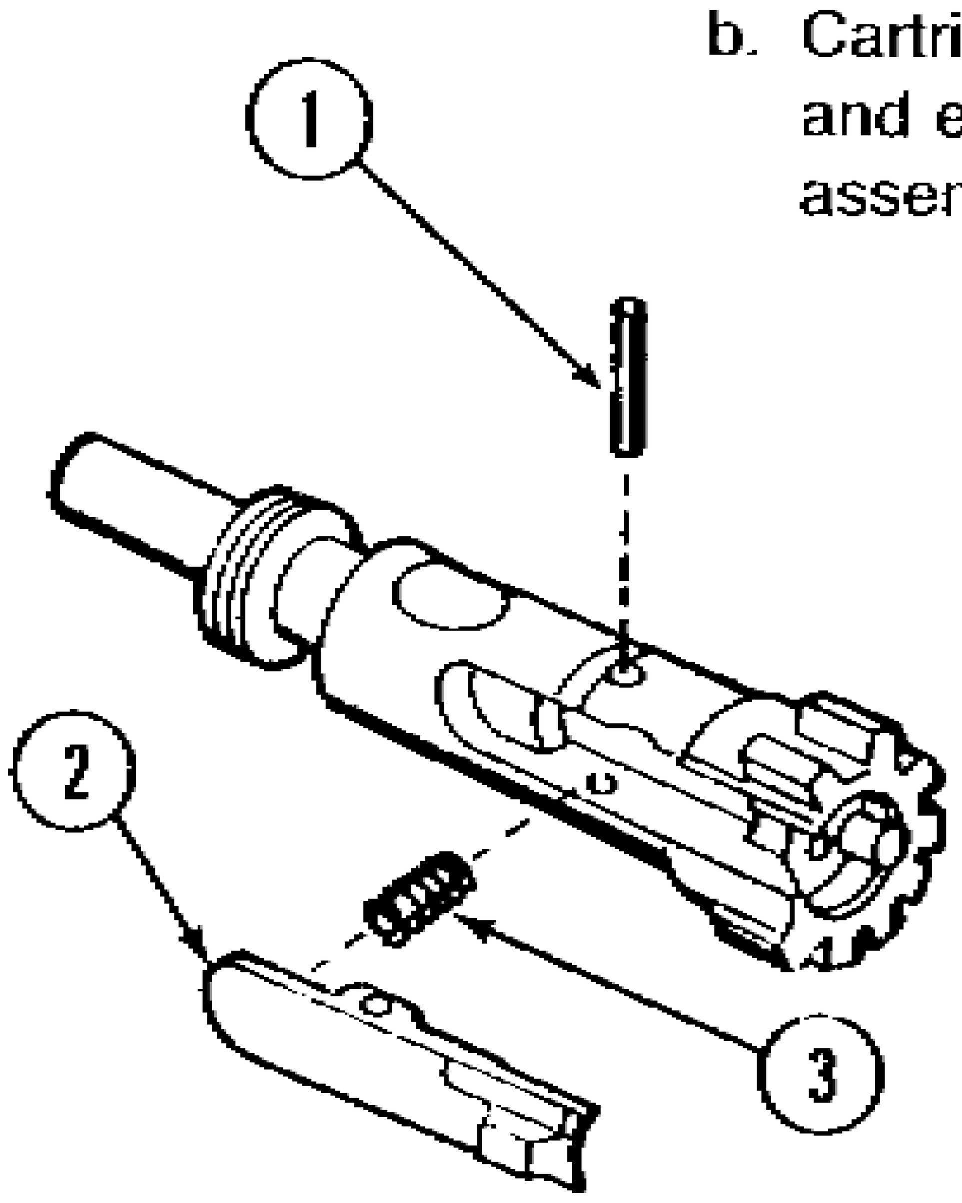
LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

CAUTION

If firing pin is used as a tool to push out extractor pin, use extreme care not to damage tip of firing pin.

LOCATION	ITEM	ACTION	REMARKS
Bolt Assembly	a. Extractor pin (1), cartridge extractor (2), and extractor spring assembly (3)	Push out extractor pin and remove cartridge extractor and spring assembly as a unit.	Do not separate cartridge extractor and spring assembly unless replacement of either or both is required.
	b. Cartridge extractor (2) and extractor spring assembly (3)	Twist spring assembly counterclockwise to remove from cartridge extractor.	**NOTE** Do not remove insert assembly from spring assembly



2-15. BOLT ASSEMBLY (CONT).

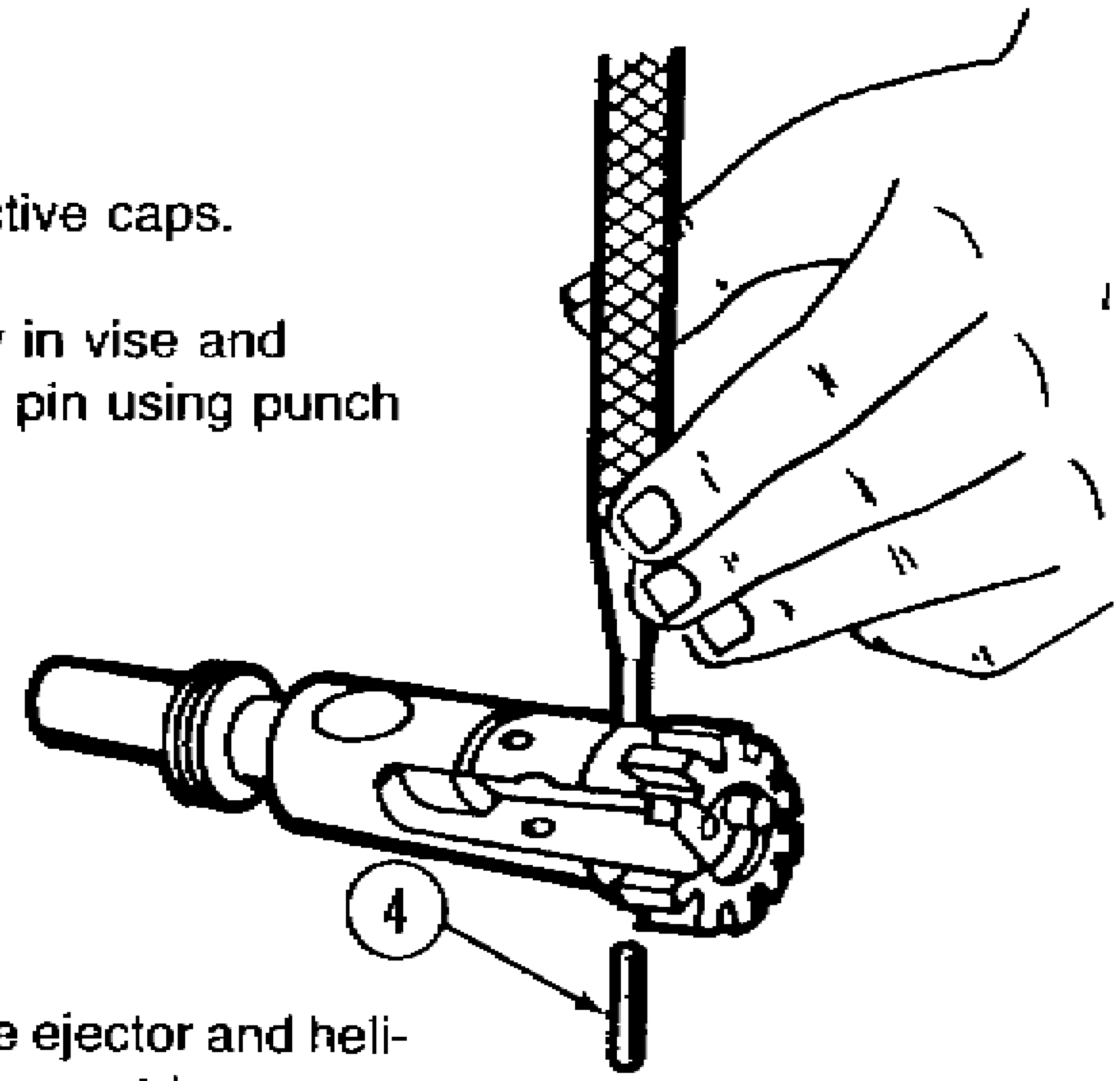
LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY (CONT)

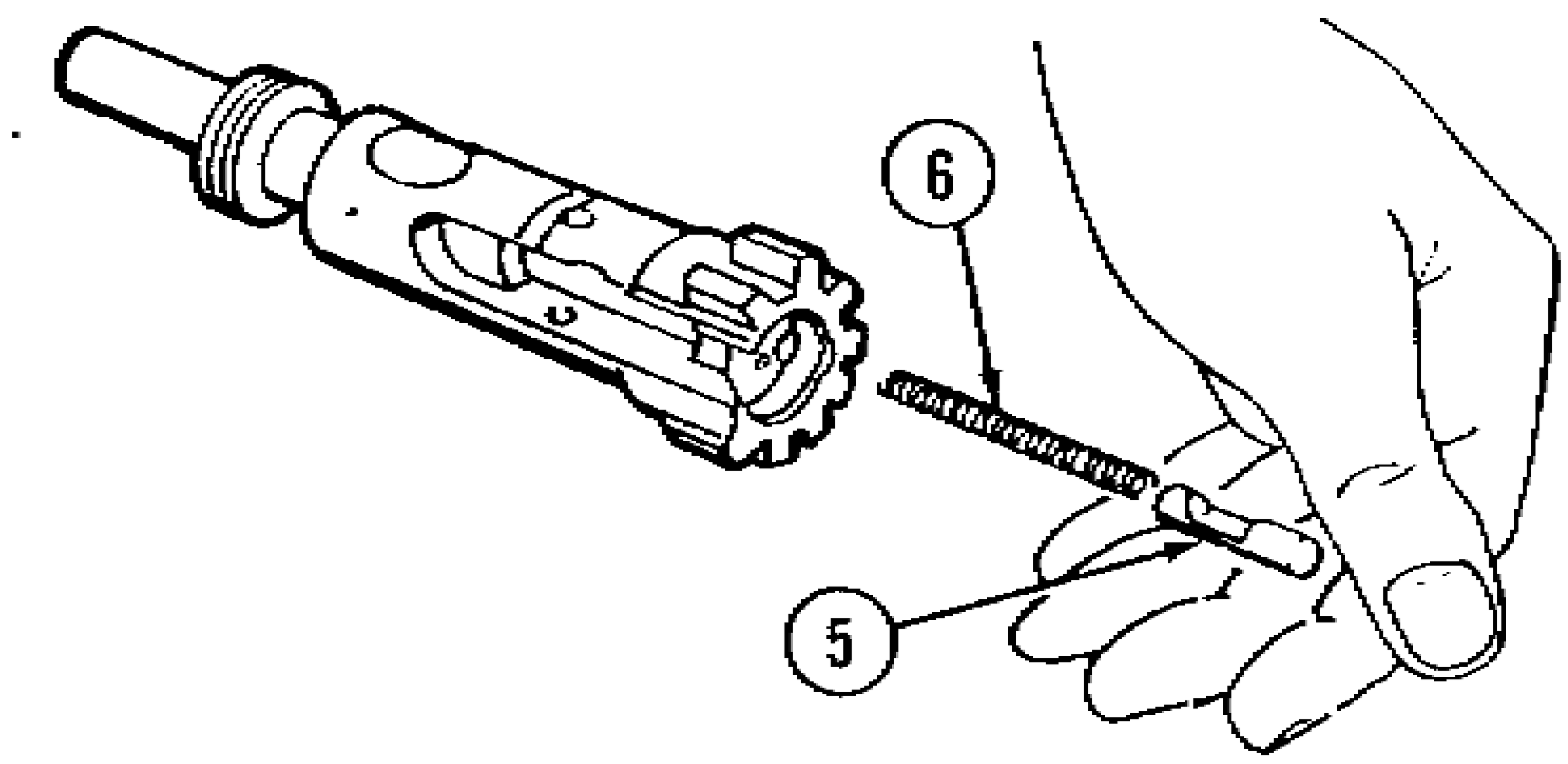
CAUTION

Be sure to use vise jaw protective caps.

	c. Spring pin (4)	Hold bolt body in vise and remove spring pin using punch and hammer.	



	d. Cartridge ejector (5) and helical spring (6)	Catch cartridge ejector and helical spring to prevent loss.	



CLEANING

CAUTION

Do not distort extractor pin or spring assembly during cleaning.

Bolt Assembly	All items	Remove carbon with CLP (item 5, app D).	

LUBRICATION

Bolt Assembly	All items	Cover with light coat of CLP (item 5, app D).	

REPAIR

Bolt Assembly	All authorized items	Replace if unserviceable.	

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY

WARNING

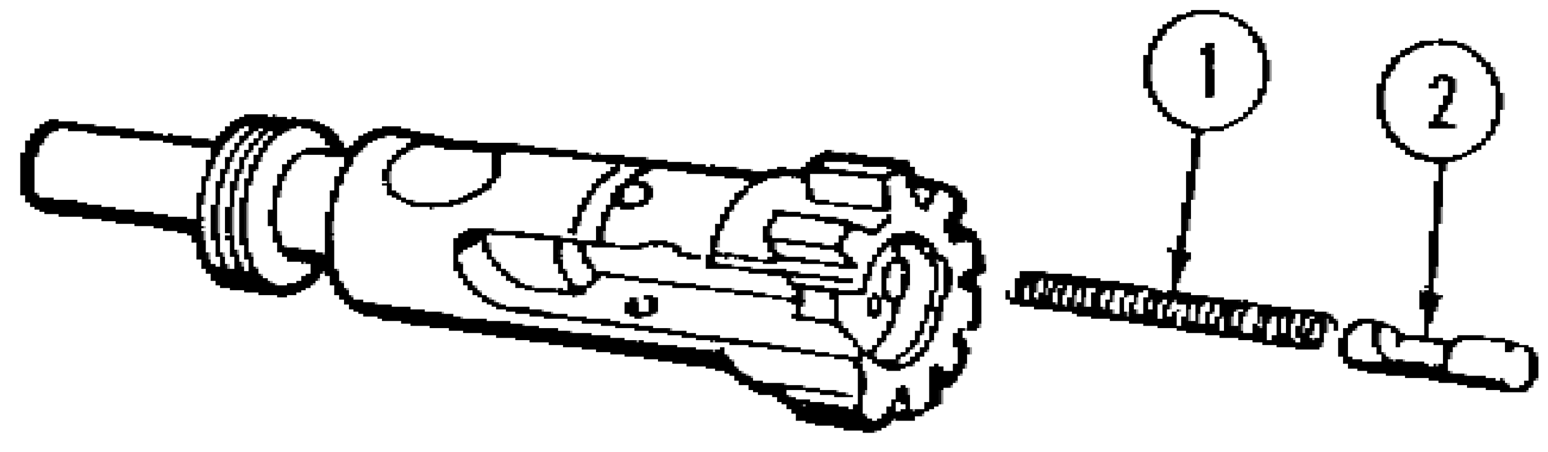
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

Do not interchange bolt assemblies or other components from one weapon to another. Doing so may result in injury to, or death of, personnel.

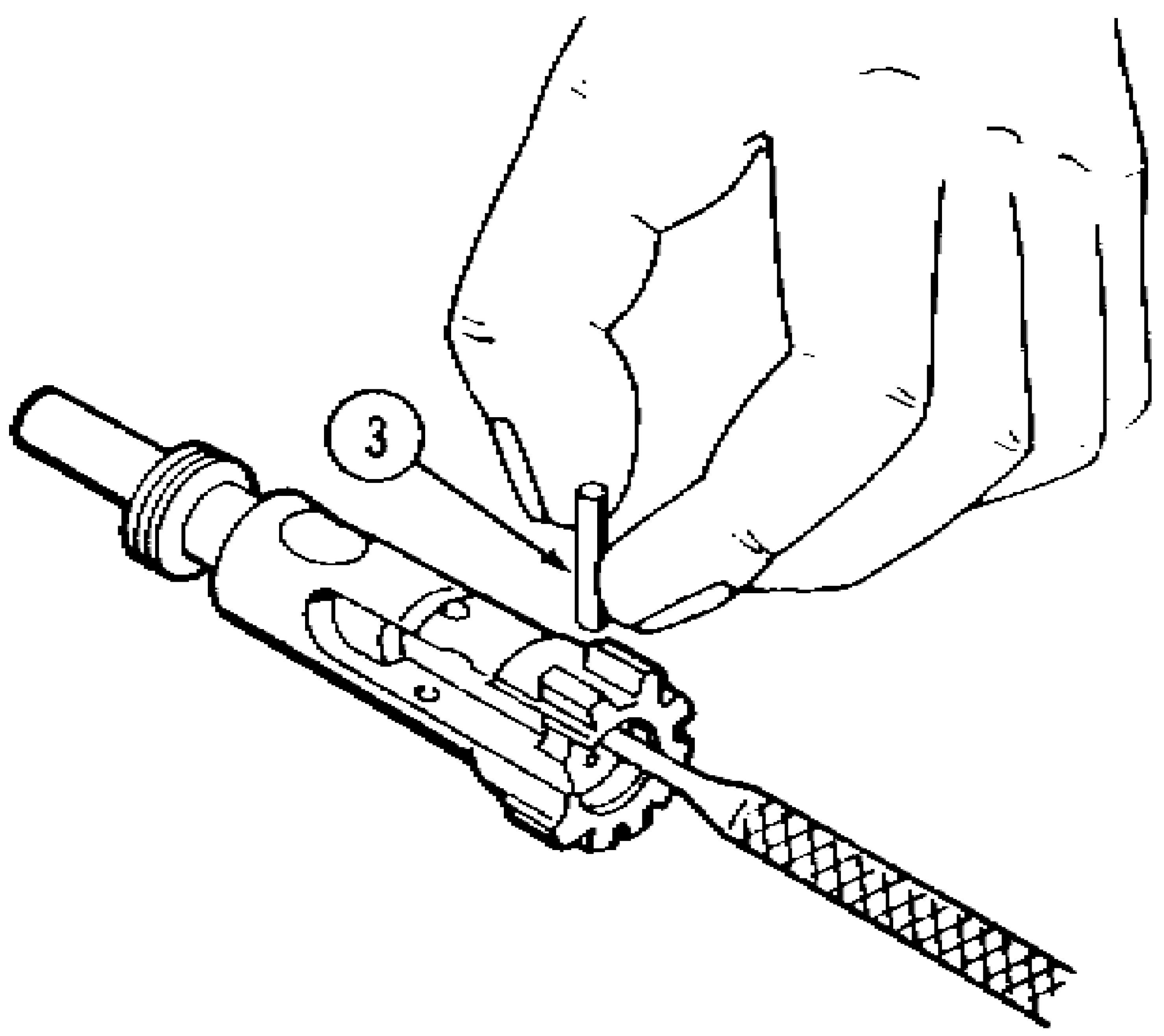
CAUTION

Be sure to use vise jaw protective caps.

LOCATION	ITEM	ACTION	REMARKS
Bolt Assembly	a. Helical spring (1) and cartridge ejector (2)	Install. Aline the groove on the cartridge ejector so that the spring pin can be installed.	



LOCATION	ITEM	ACTION	REMARKS
	b. Spring pin (3)	Hold bolt body in vise. Start spring pin in hole. Compress and hold the helical spring and cartridge ejector in place with punch and then complete the installation of spring pin (3) using hammer.	

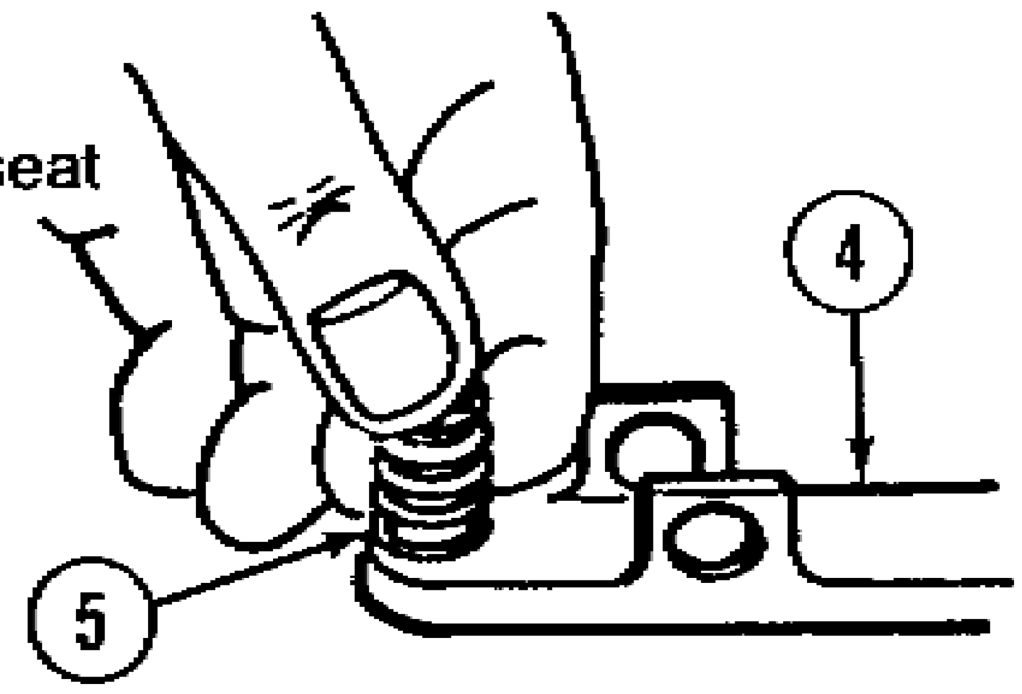


2-15. BOLT ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY (CONT)

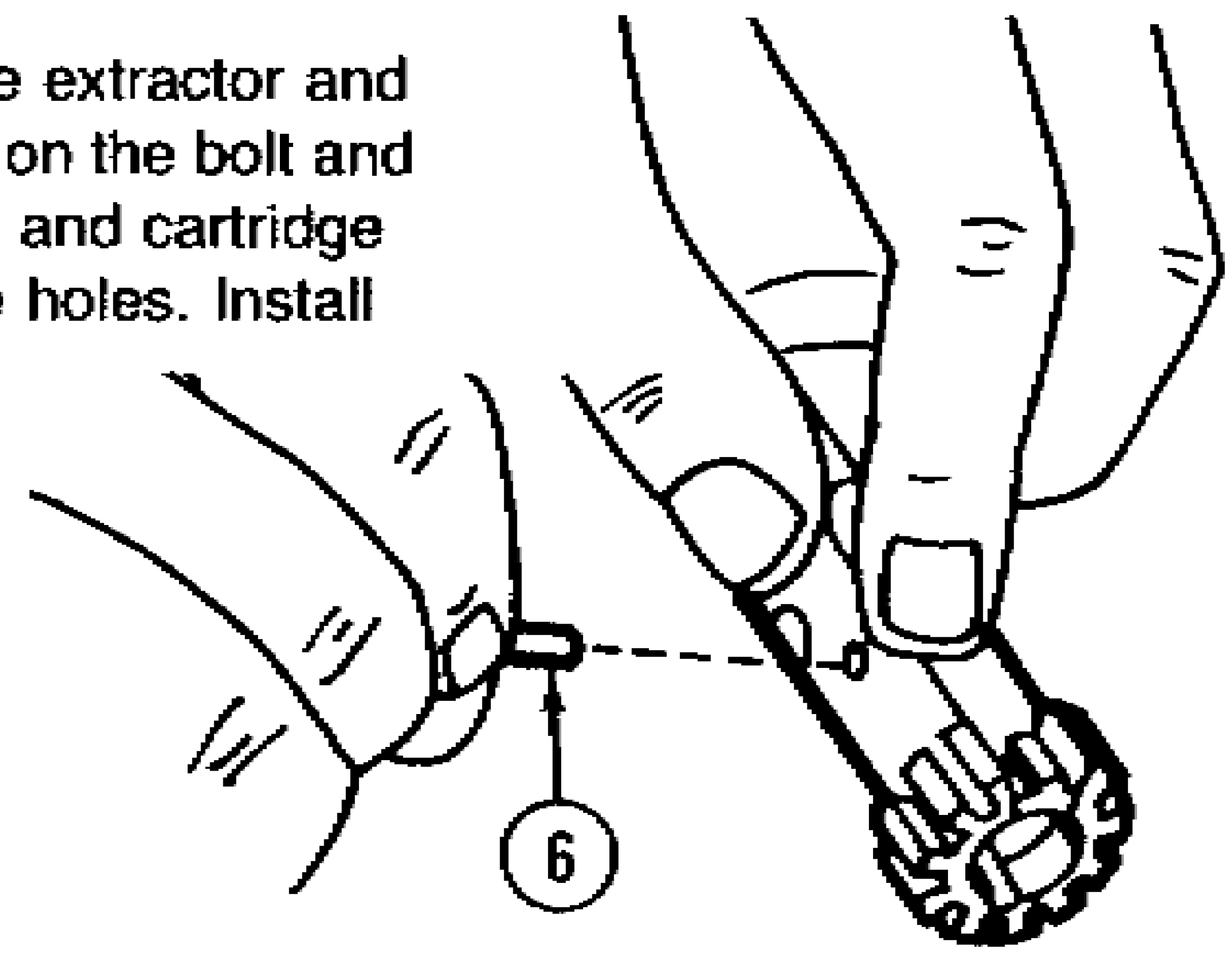
	c. Cartridge extractor (4) and extractor spring assembly (5)	Insert large end of spring assembly into extractor and seat b, turning clockwise.	



NOTE

Do not disassemble insert from spring assembly.

	d. Cartridge extractor (4), extractor spring assembly (5), and extractor pin (6)	Position cartridge extractor and spring assembly on the bolt and compress spring and cartridge extractor to aline holes. Install extractor pin.	



2-16. CHARGING HANDLE ASSEMBLY.

This task covers:

a. Disassembly
b. Inspection/Repair
c. Lubrication
d. Reassembly

INITIAL SETUP

Tools

Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)

Materials/Parts

Cleaner, lubricant and preservative (CLP)
(item 5, app D)

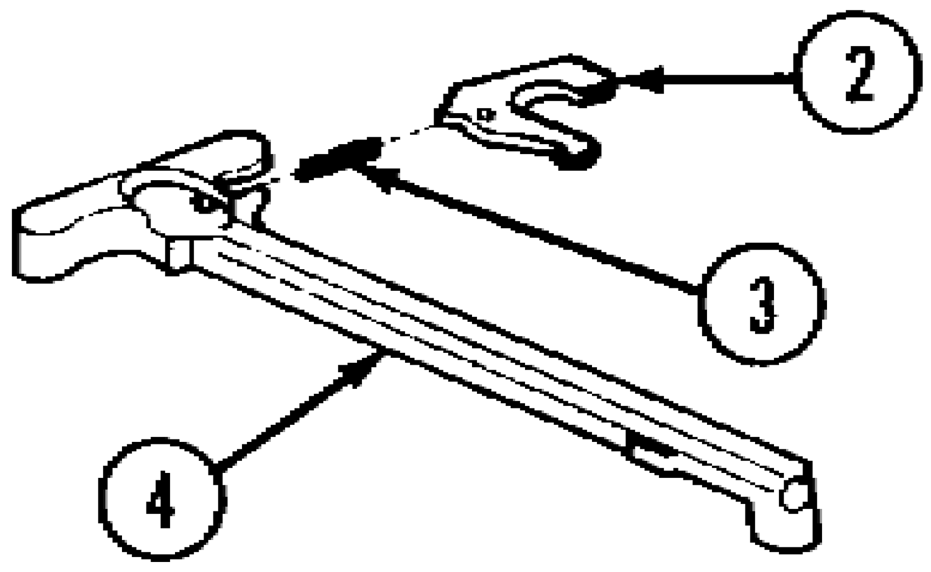
References

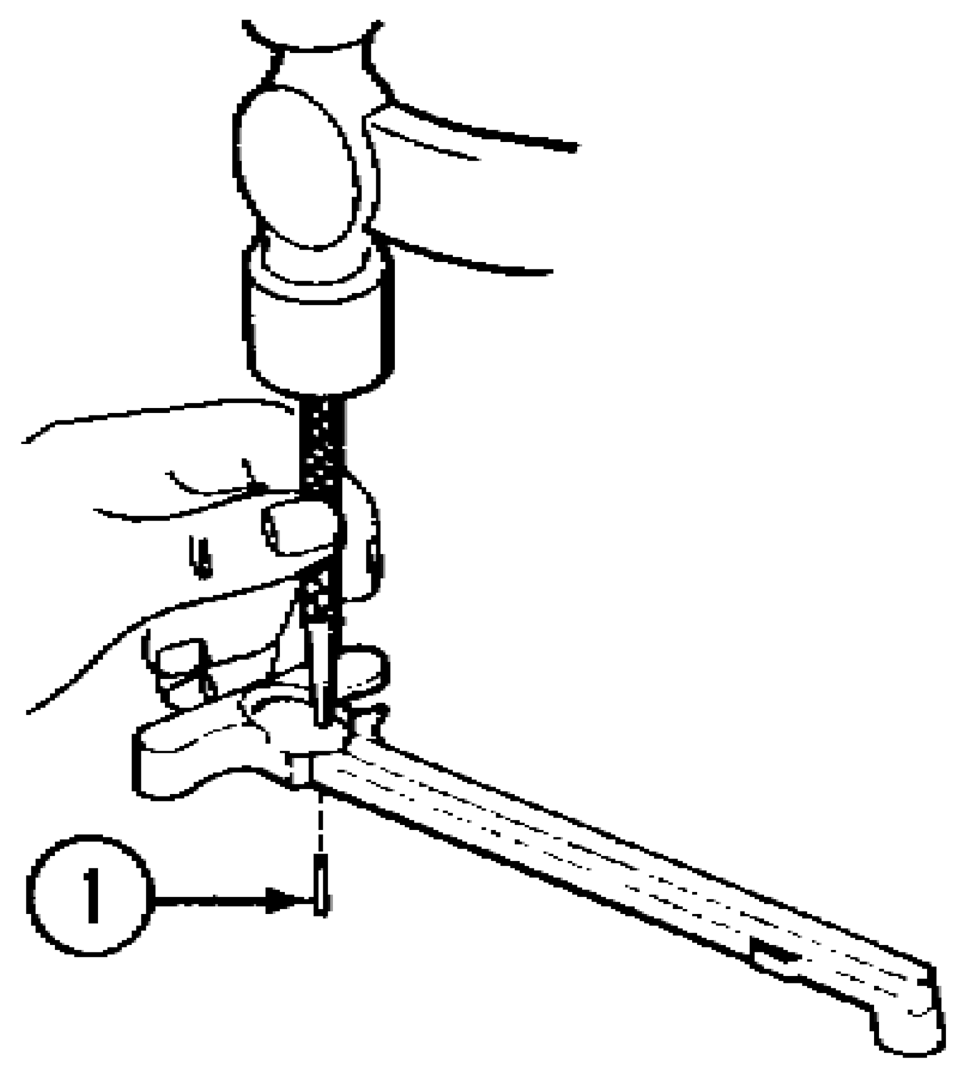
TM 9-1005-249-10

LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

Charging Handle	a. Spring pin (1)	Remove using hammer and punch.	
	b. Charging handle latch (2), helical spring (3), and handle (4)	Catch charging handle latch and helical spring to prevent loss.	





INSPECTION/REPAIR

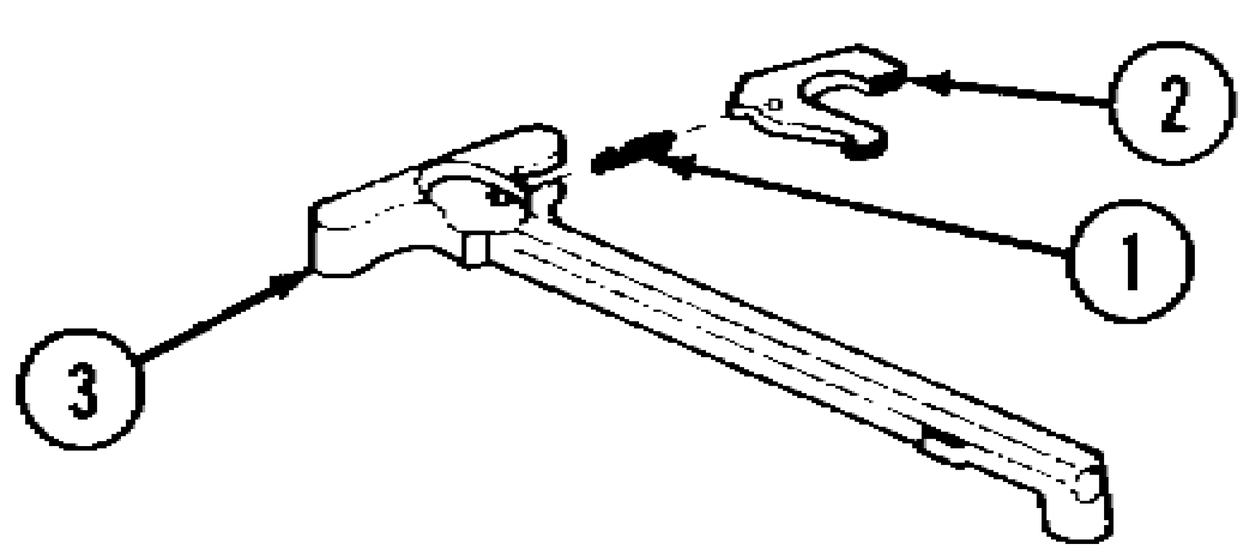
Charging Handle	All authorized items	Inspect for serviceability. Replace if unserviceable.	Items are unserviceable if broken, cracked, or mutilated.

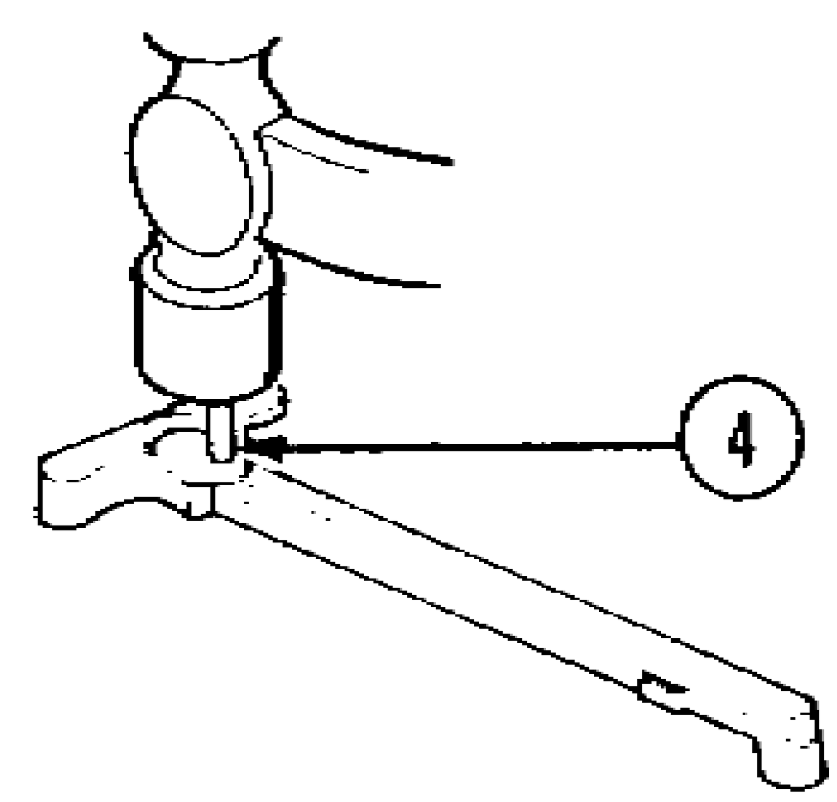
LUBRICATION

Charging Handle	All items	Lightly coat with CLP (item 5, app D.)	

REASSEMBLY

Charging Handle	a. Helical spring (1), charging handle latch (2), and handle (3)	Position helical spring and charging handle latch in handle, align holes, and hold in position.	
	b. Spring pin (4)	Install using hammer.	





2-17. UPPER RECEIVER AND BARREL ASSEMBLY.

This task covers:

a. Disassembly
b. Inspection/Repair
c. Reassembly

INITIAL SETUP

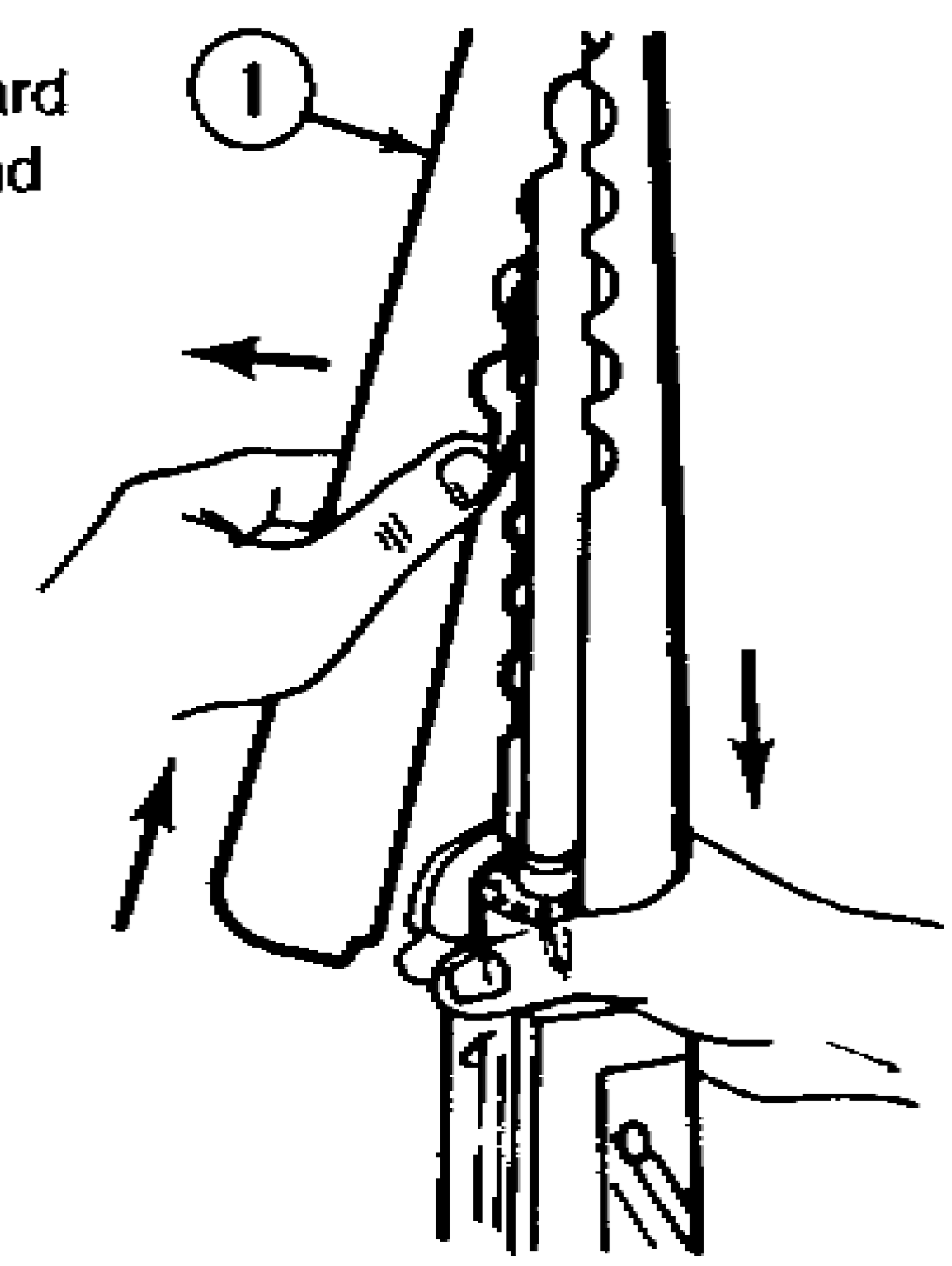
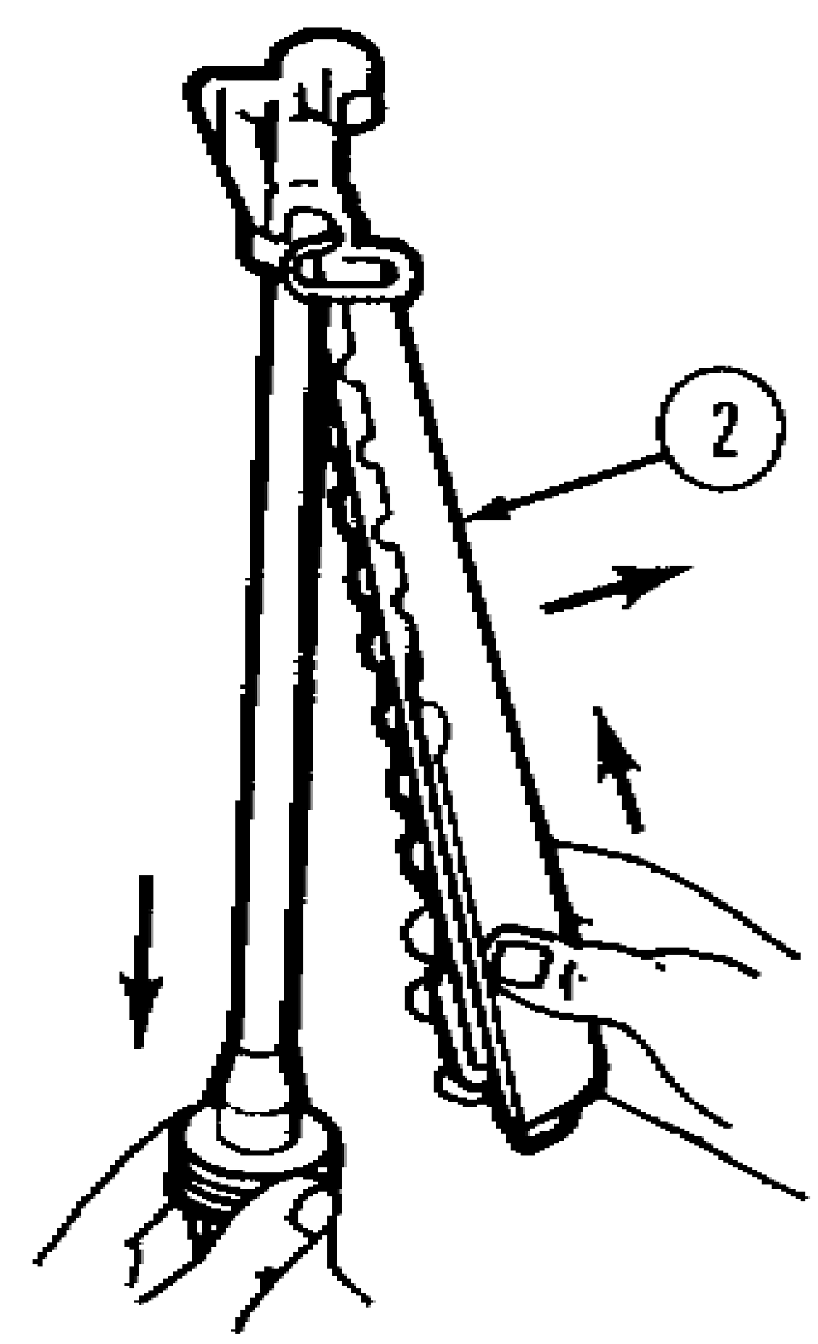
References
TM 9-1005-249-10

LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

NOTE

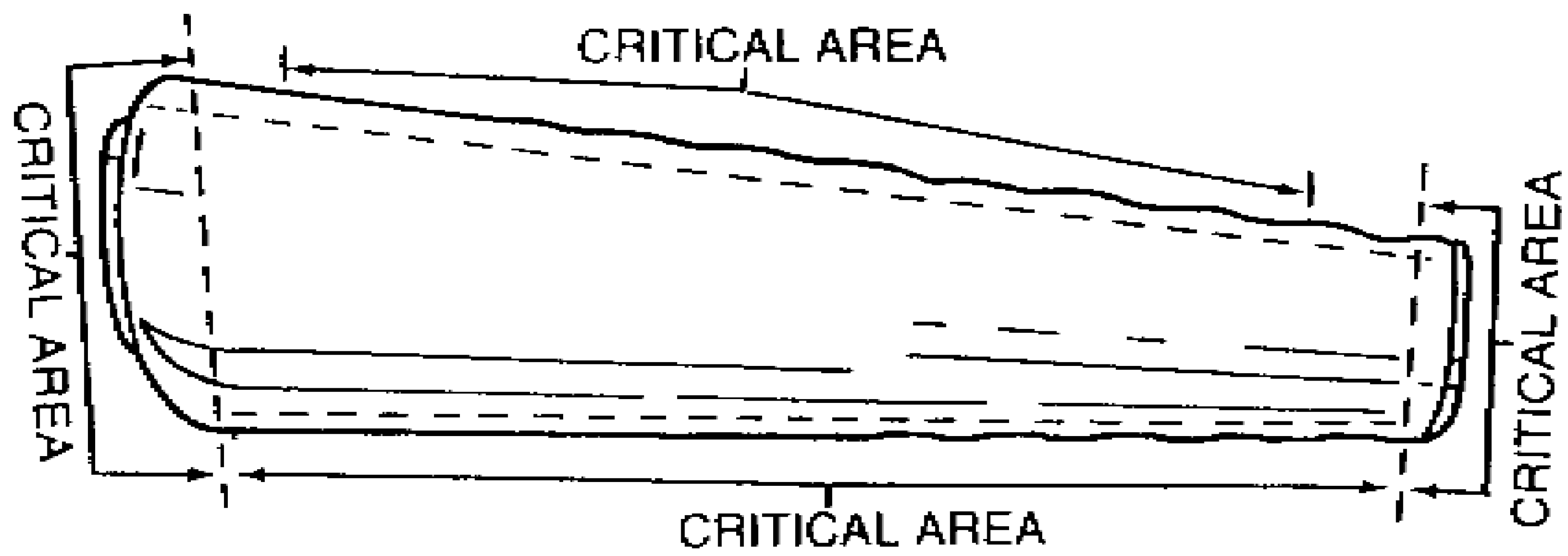
Refer to TM 9-1005-249-10 for "buddy system" procedure on removing hand guards.

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. RH hand guard (1)	Push down on the handguard slip ring and lift the RH hand guard (1) up and out.	
	b. LH hand guard (2)	Push down on the handguard slip ring and lift the LH hand guard (2) up and out.	

LOCATION	ITEM	ACTION	REMARKS

INSPECTION/REPAIR

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	Hand guard assembly	Inspect for breaks, separation, broken tabs, and cracks.	Breaks and separations of material which prevent proper retention or interfere with function of the weapon will be cause for rejection. Cracks up to one inch in length which do not interfere with function of weapon are allowable. Four tabs missing or two adjacent tabs missing from either hand guard will be cause for rejection. Hand guards which have four or more heatshield retaining drive screws missing or a heatshield which is loose enough to rattle will be discarded and replaced.

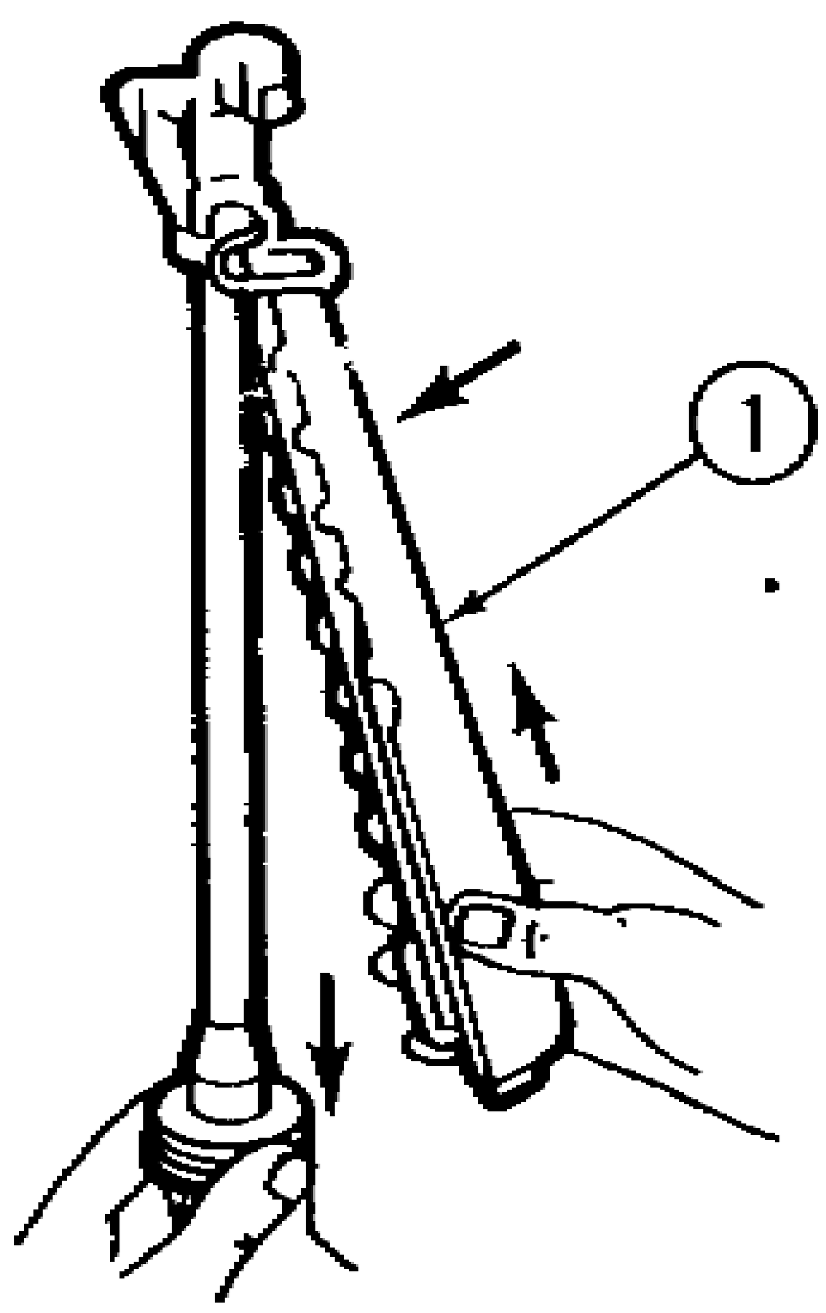


REASSEMBLY

NOTE

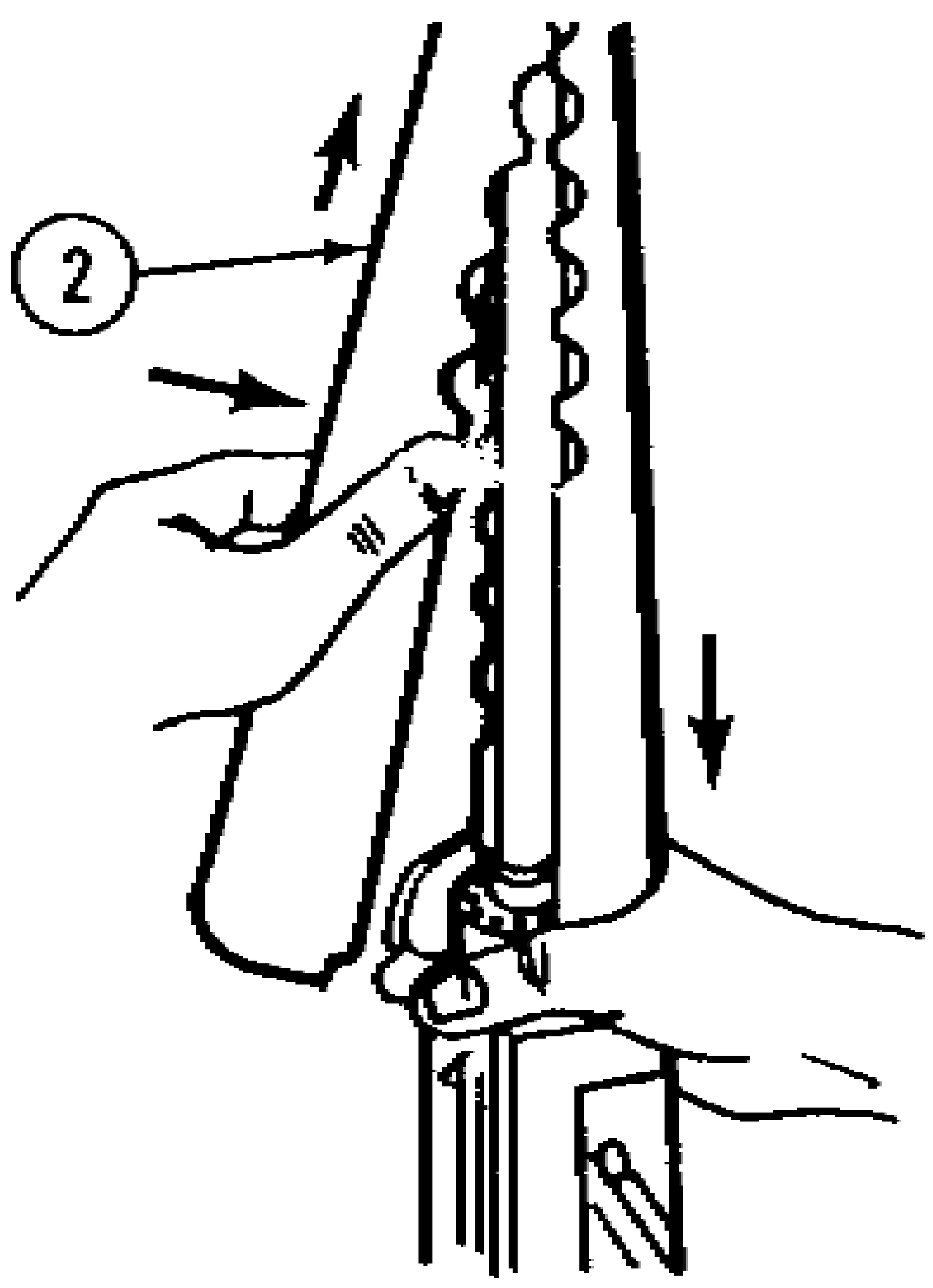
Refer to TM 9-1005-249-10 for "buddy system" procedure on removing.

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. LH hand guard (1)	Install front of LH hand guard in the cap. Push down on handguard slip ring. Push hand guard in place and release handguard slip ring.	



2-17. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
REASSEMBLY (CONT)			
	b. RH hand guard (2)	Install front of RH hand guard in tube cap. Push down on hand-guard slip ring. Push hand guard in place and release handguard slip ring.	



2-18. UPPER RECEIVER AND BARREL ASSEMBLY.

This task covers:

a. Disassembly
b. Cleaning
c. Inspection
d. Repair
e. Lubrication
f. Reassembly

INITIAL SETUP

Tools
Sight removal tool (E-1, app E)
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)

Materials/Parts
Cleaner, lubricant and preservative (CLP)
(item 5, app D)

Equipment Configuration
Upper receiver and barrel assembly removed from lower receiver.

General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

When using solid film lubricant or dichloromethane, be sure the area is well ventilated.

Do not interchange bolt assemblies or other components from one weapon to another. Doing so may result in injury to, or death of, personnel.

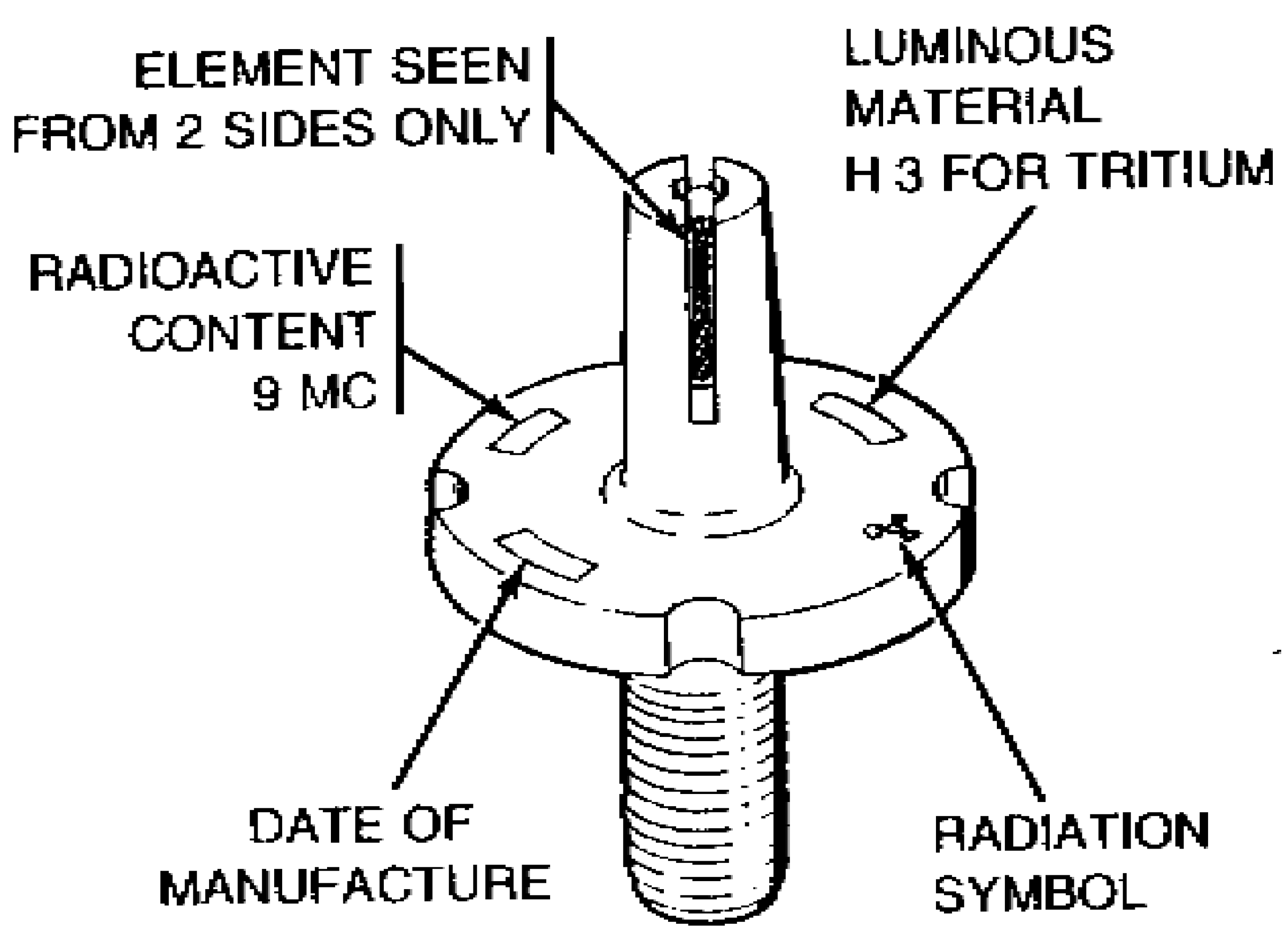


Barrel assembly may be equipped with a low light level sight. The low light level sight contains radioactive material. If so equipped, do not insert metal objects into the post slot or otherwise treat roughly to cause breakage of the radioactive element.

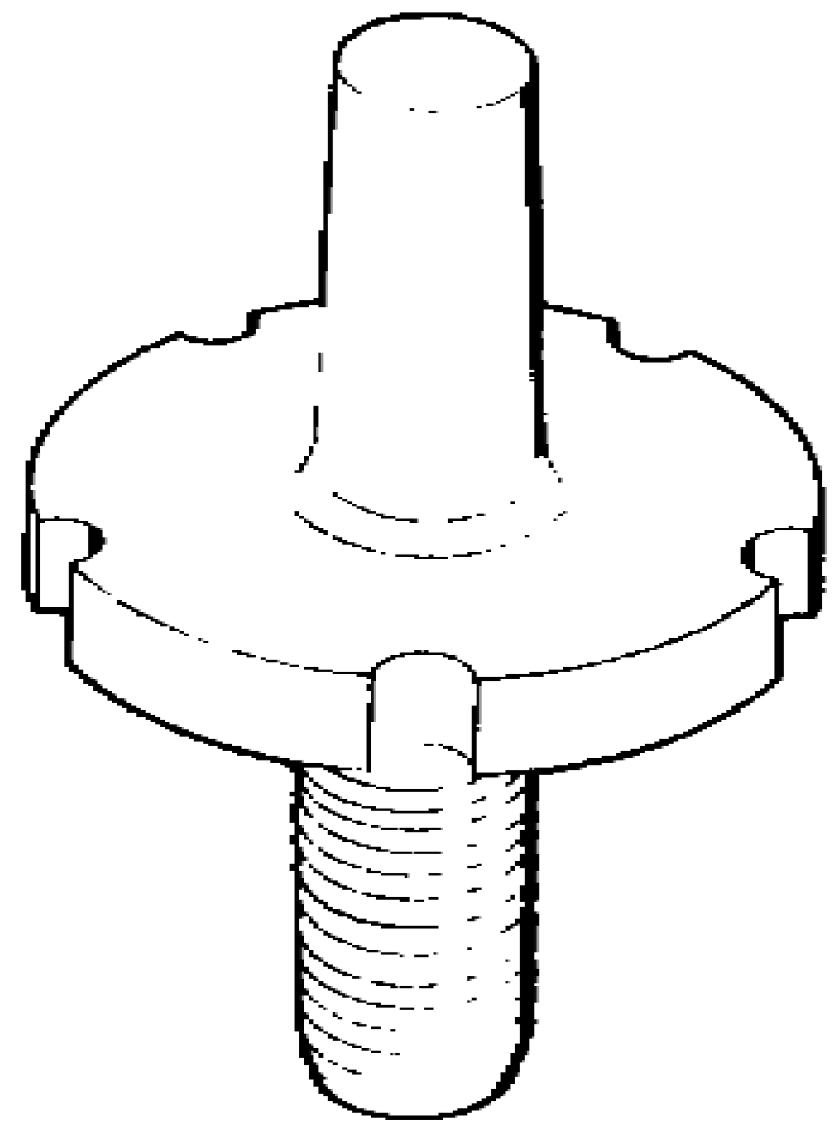
LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. Front sight	Inspect for type installed.	Prior to disassembly, determine if a radioactive sight is installed and if it has been damaged. If damaged, see warning page and section V on page 2-14.



FRONT LOW LIGHT LEVEL POST ASSEMBLY

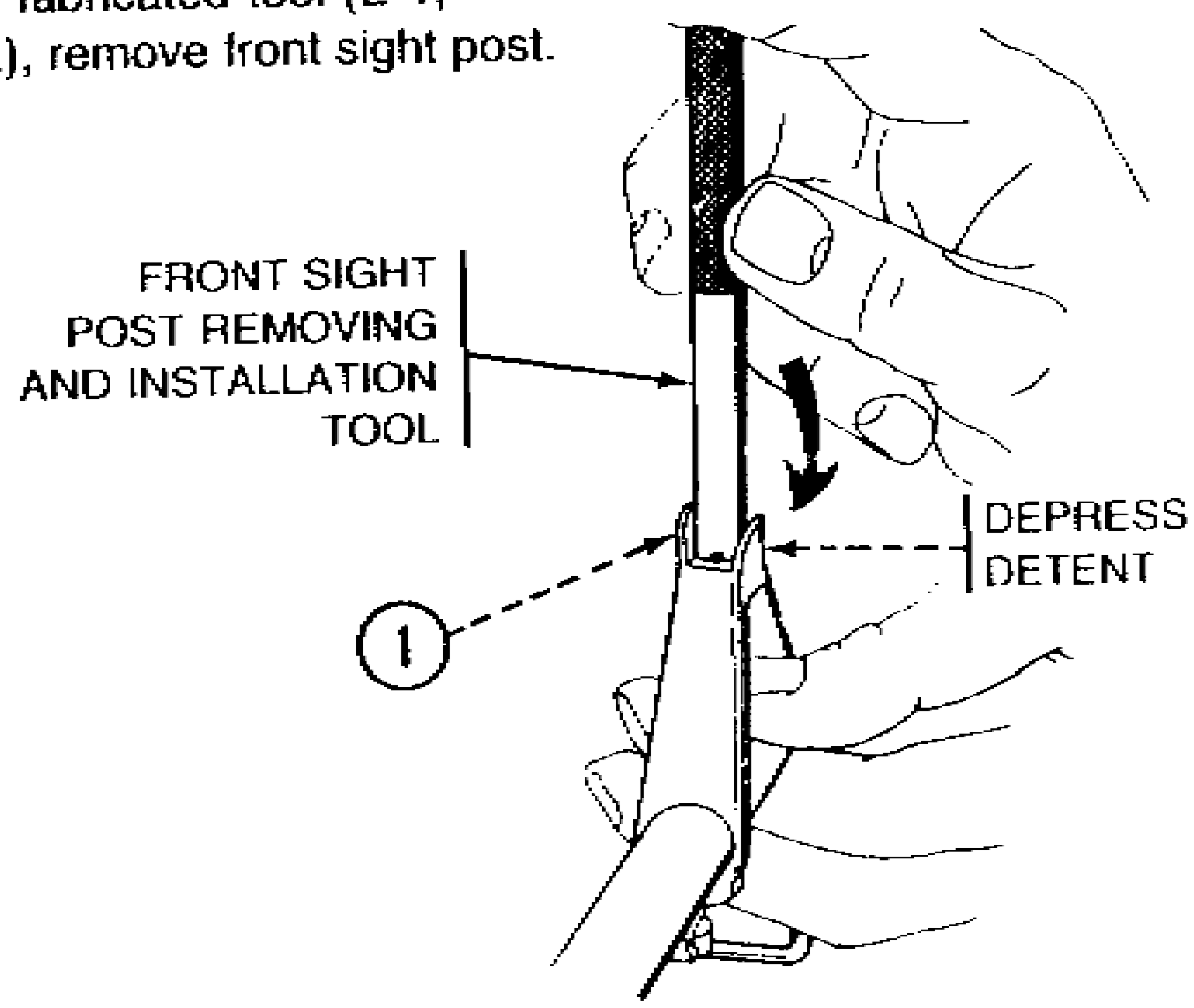

STANDARD FRONT SIGHT POST

WARNING

If weapon is equipped with low light level front post assembly, see page 4-5 and 4-24 for usable life and maintenance.

If weapon is equipped with standard steel front sight post, see page 2-30 for maintenance.

LOCATION	ITEM	ACTION	REMARKS
	b. Front sight post (1)	Using fabricated tool (E-1, app E), remove front sight post.	

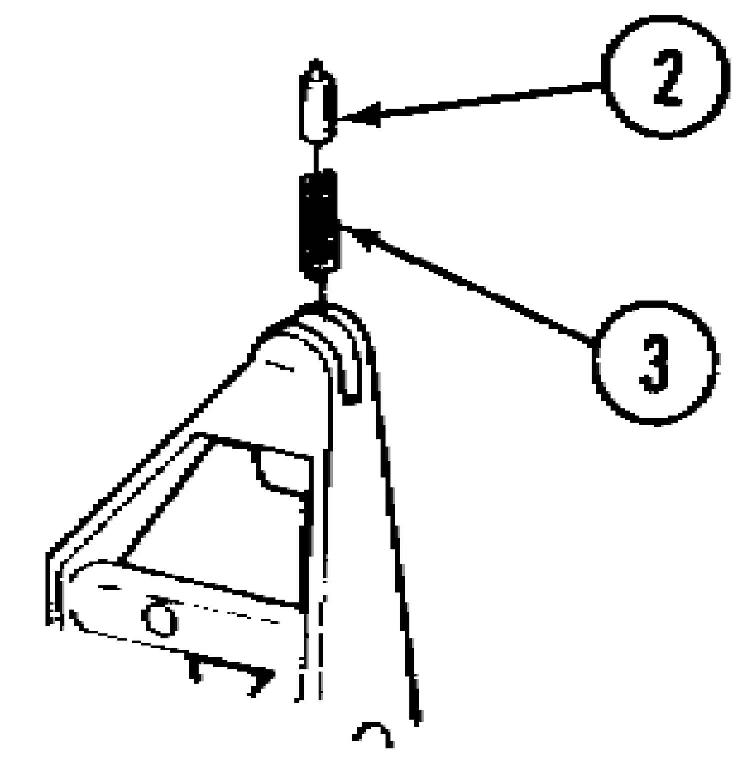


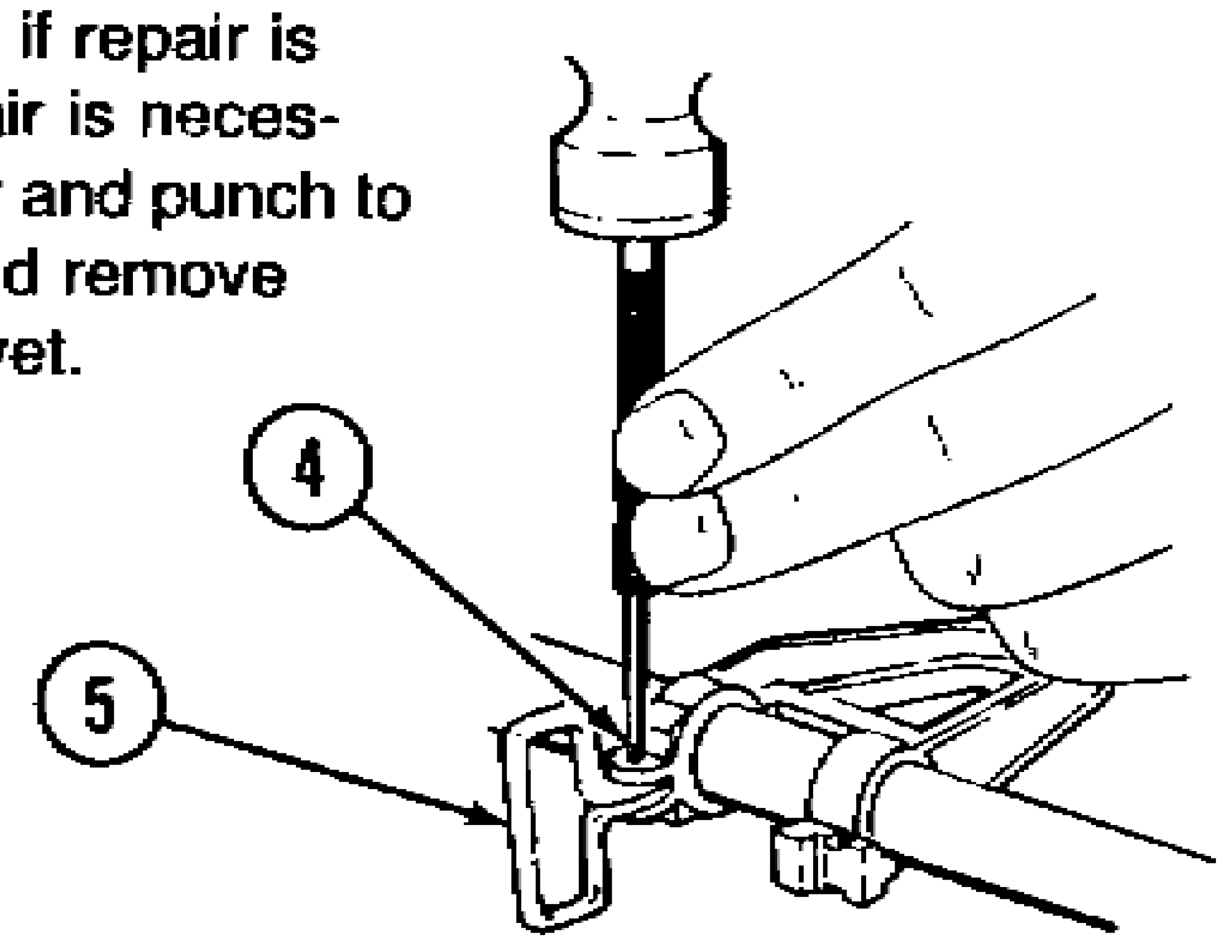
2-18. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY (CONT)

LOCATION	ITEM	ACTION	REMARKS
	c. Front sight detent (2) and helical spring (3).	Catch front sight detent and helical spring to prevent loss.	
	d. Tubular rivet (4) and sling swivel (5)	Disassemble only if repair is necessary. If repair is necessary, use hammer and punch to knock out rivet and remove swivel. Discard rivet.	





CLEANING

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	All items	Clean with CLP (item 5, app D).	

INSPECTION

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. Front sight assembly	Inspect for chips, breaks, bends, and cracks.	
	b. Front sight area	Inspect for evidence of gas leakage around gas tube.	
	c. Low light level sight (if installed)	Visually inspect for broken sights and loss of illumination.	For use on H 3 sight.
	d. Barrel	Inspect for pits in bore, burrs, broken or worn locking lugs, and surface cracks and defects.	Pits no wider than a land or groove and 3/8 inch or less in length are allowable in the bore. Uniformly fine pits in a densely pitted area of the bore are allowable.

LOCATION	ITEM	ACTION	REMARKS
		Inspect bore for dirt and rust.	
		Inspect bore for ringing.	Definitely ringed bores or bores ringed sufficiently to bulge the outside surface of the barrel are causes for rejection.
			Lands that appear dark due to coating of gilding metal from projectiles are allowable.
			Stripping of lands and grooves shall not be cause for rejection unless so determined by barrel erosion gage.
		Inspect chamber for pitting.	Fine pits, or fine pits in a densely pitted area, are allowable. Pits 1/8 inch in length are cause for rejection.

REPAIR

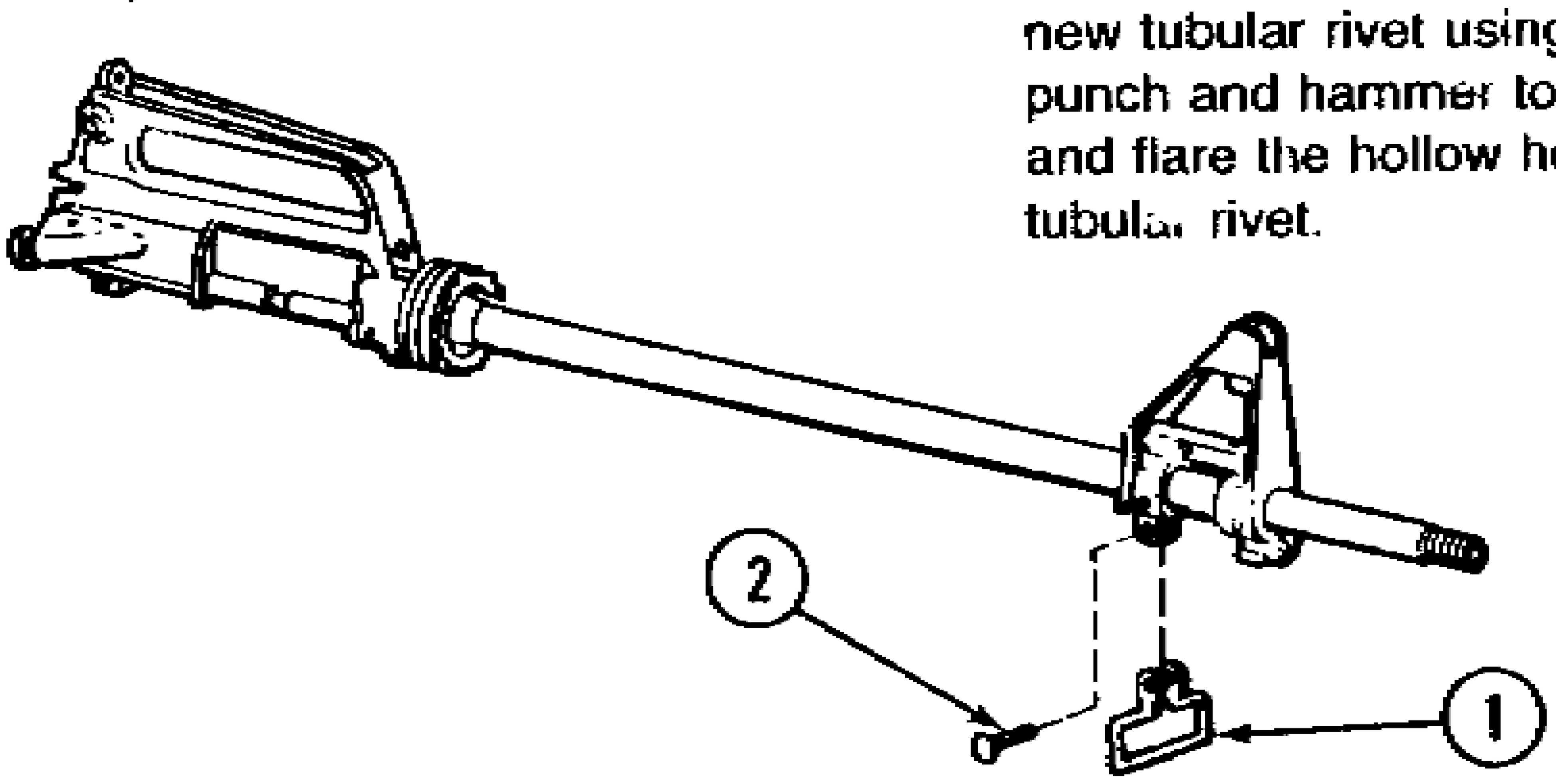
LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	All items	Replace authorized unserviceable parts.	

LUBRICATION

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	All items	Cover with a light coat of CLP (item 5, app D).	

REASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. Sling swivel (1) and tubular rivet (2)	If previously disassembled, position sling swivel and install new tubular rivet using center punch and hammer to spread and flare the hollow head of tubular rivet.	

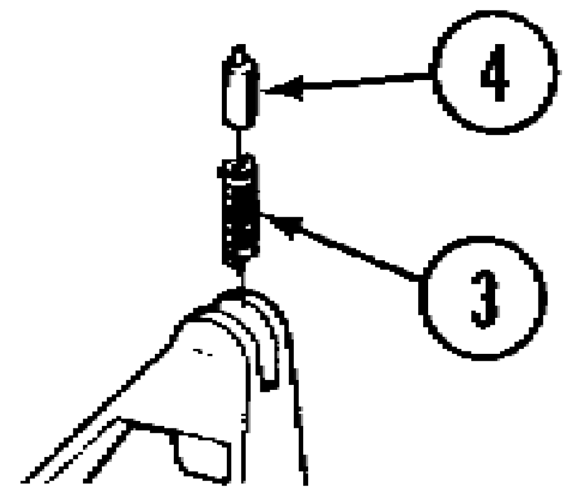


2-18. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

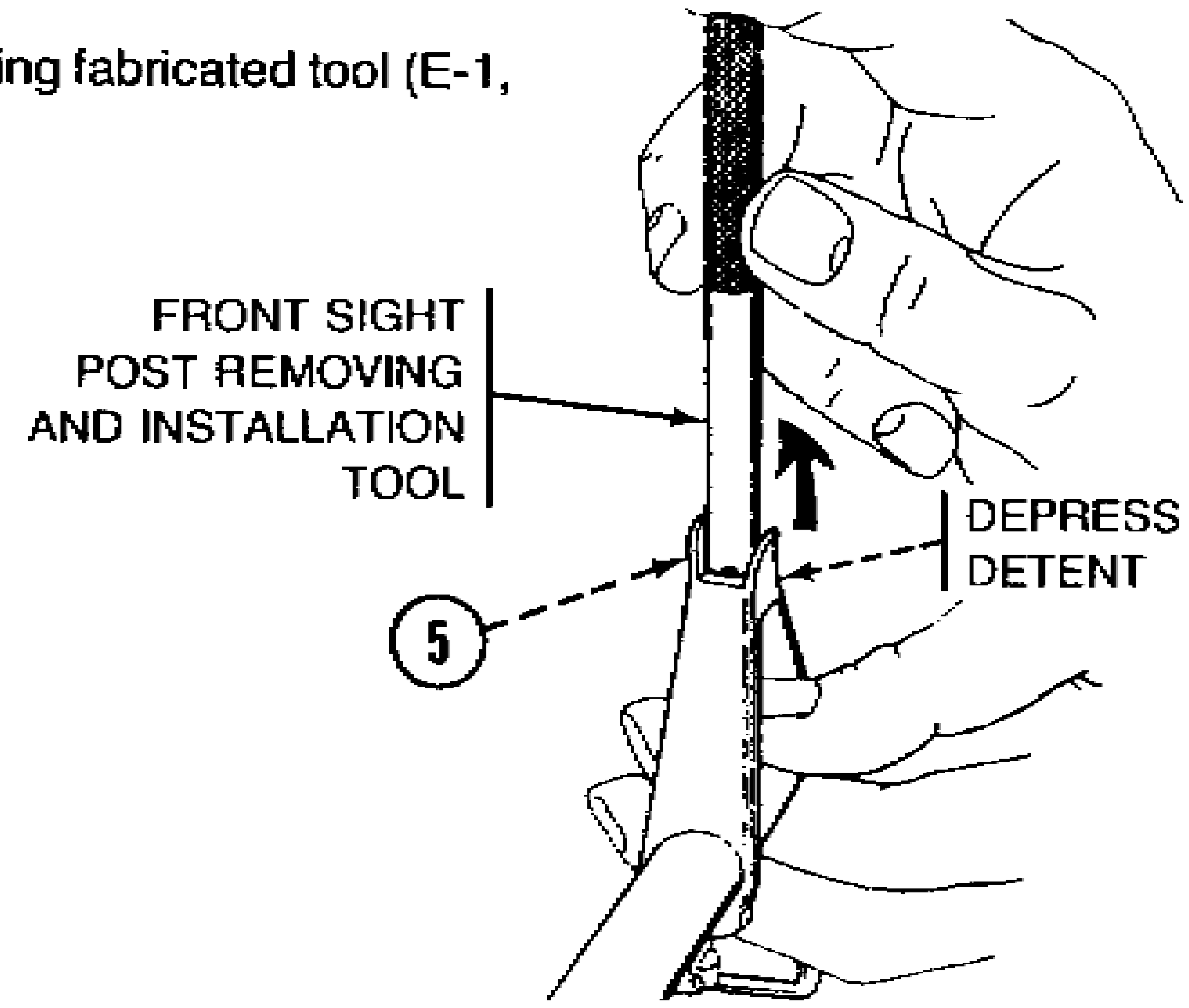
LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY (CONT)

LOCATION	ITEM	ACTION	REMARKS
	b. Helical spring (3) and front sight detent (4)	Position and depress helical spring and front sight detent with punch.	



LOCATION	ITEM	ACTION	REMARKS
	c. Front sight post (5)	Install using fabricated tool (E-1, app E).	

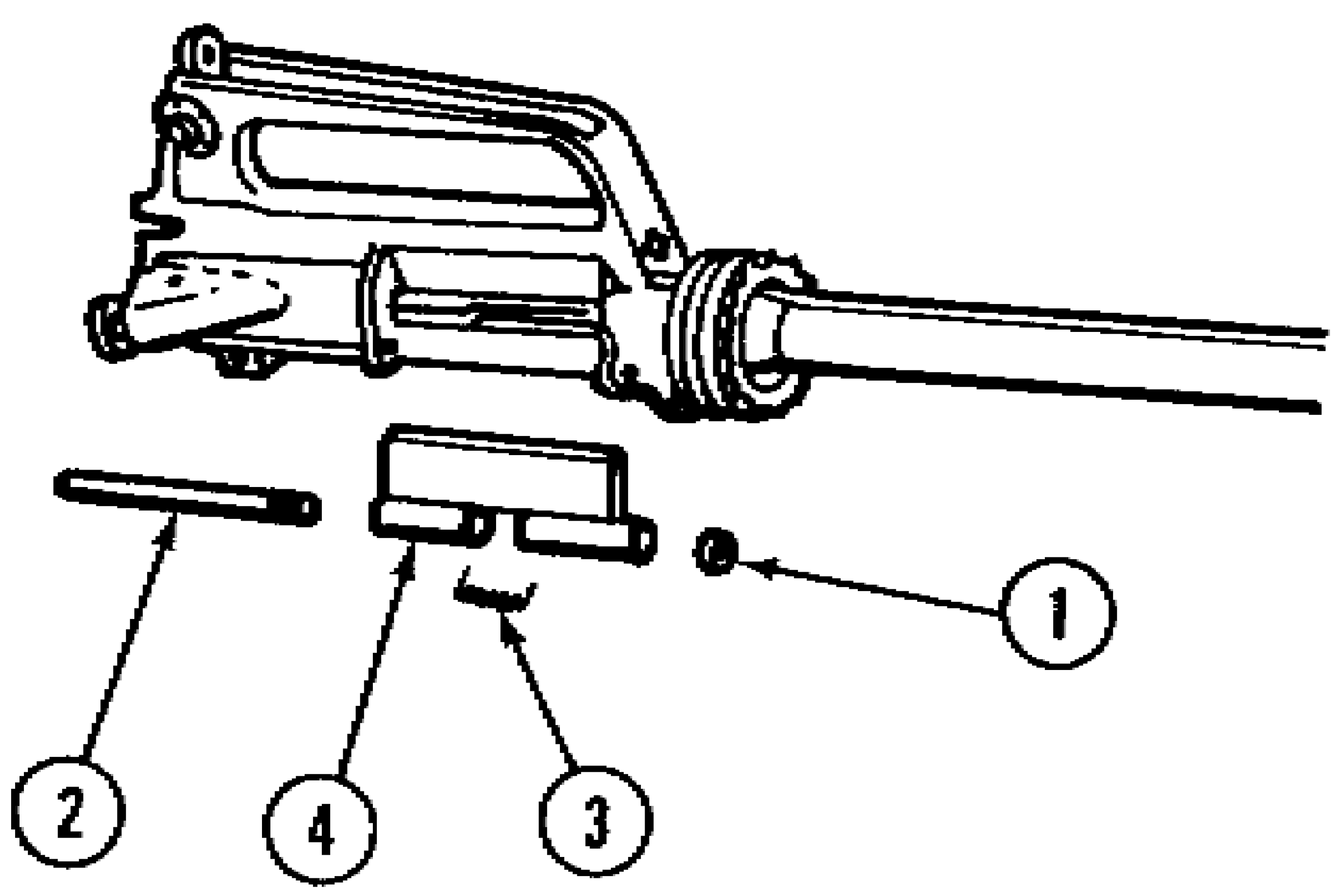


DISASSEMBLY

NOTE

Do not disassemble unless repair is necessary.

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	Retaining ring (1), ejection port cover pin (2), helical spring (3), and ejection port cover (4)	Using two flat tip screwdrivers, remove retaining ring and slide ejection port cover pin out to the rear.Catch helical spring and ejection port cover to prevent loss.	Ejection port cover pin may bind against the forward assist housing on the M16A1 rifle and require some additional force to remove.



LOCATION	ITEM	ACTION	REMARKS

INSPECTION

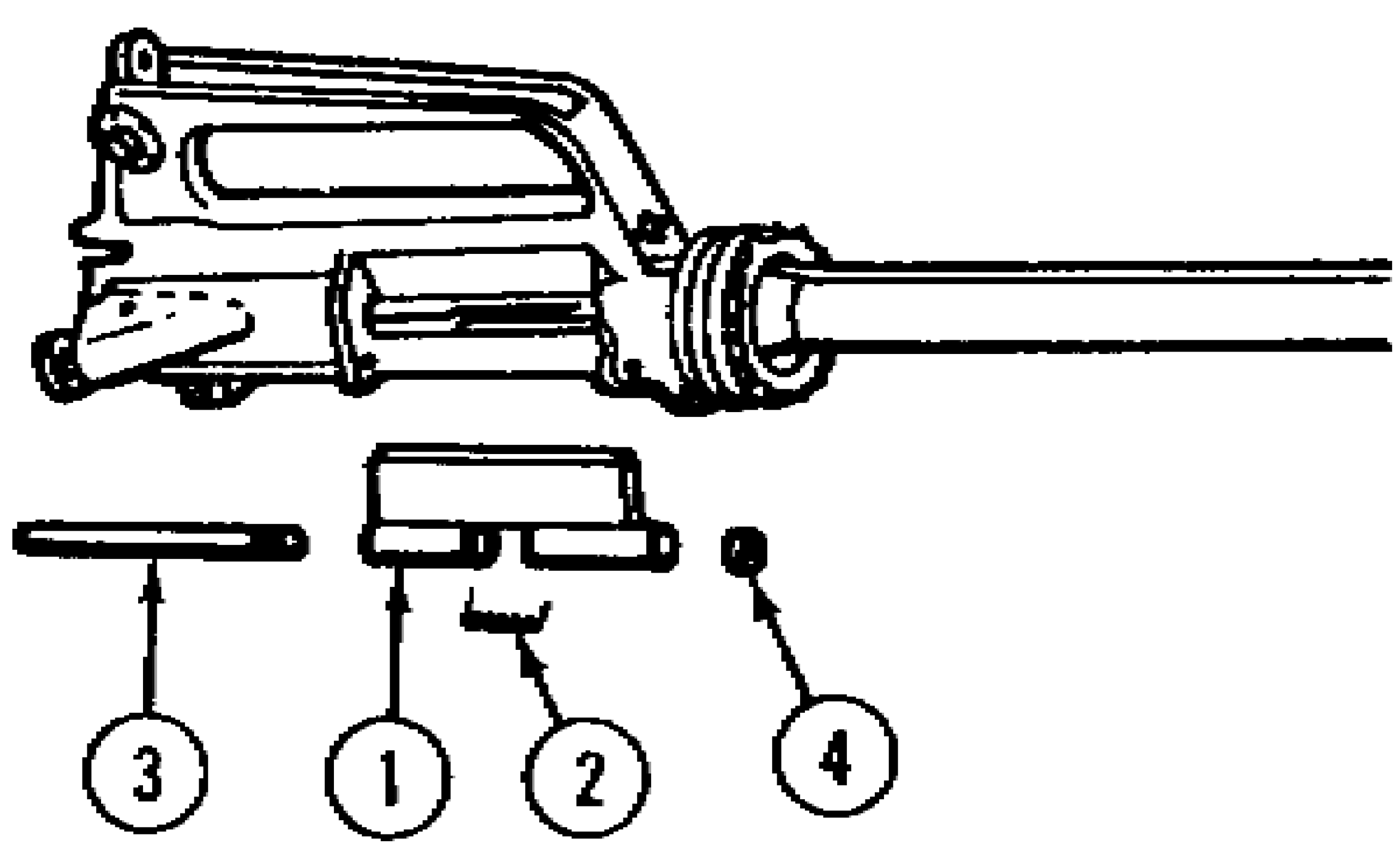
LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	All items	Inspect for serviceability.	If items are damaged or non-functional, they are unserviceable.

REPAIR

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	All authorized items	Replace if unserviceable.	

REASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	Ejection port cover (1), helical spring (2), ejection port cover pin (3), and retaining ring (4)	Position cover and spring. Slide in cover pin and install retaining ring using tweezers or round nose pliers to position ring.	Legs of spring must be pretensioned and positioned before the pin is installed. Place long leg to the rear on inside of cover; place short leg to the front below the cover outside of the receiver.



2-19. LOWER RECEIVER AND EXTENSION ASSEMBLY.

This task covers:
a. Disassembly
b. Inspection
c. Repair
d. Lubrication
e. Reassembly

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)
Pivot Pin Removing Tool (E-3, app E)

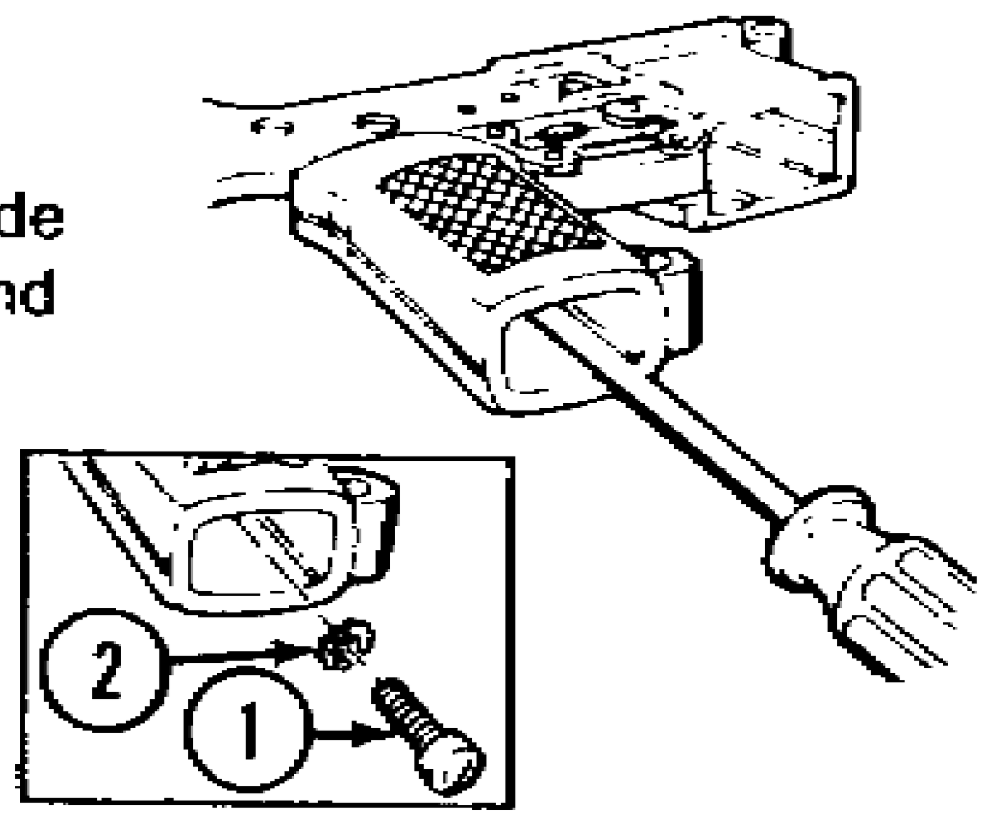
Materials/Parts
Cleaner, lubricant and preservative (CLP)
(item 5, app D)

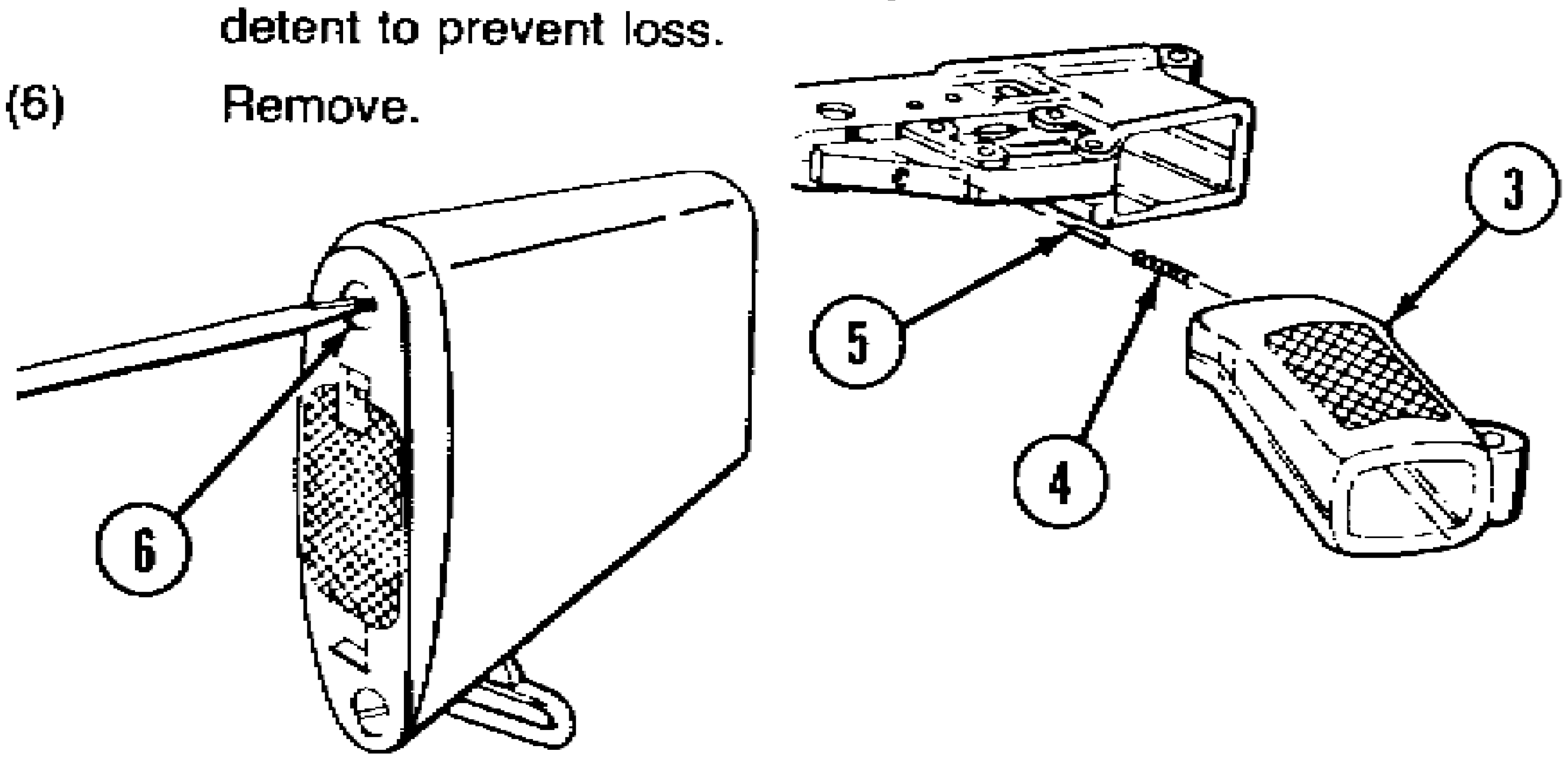
References
TM 9-1005-249-10

General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

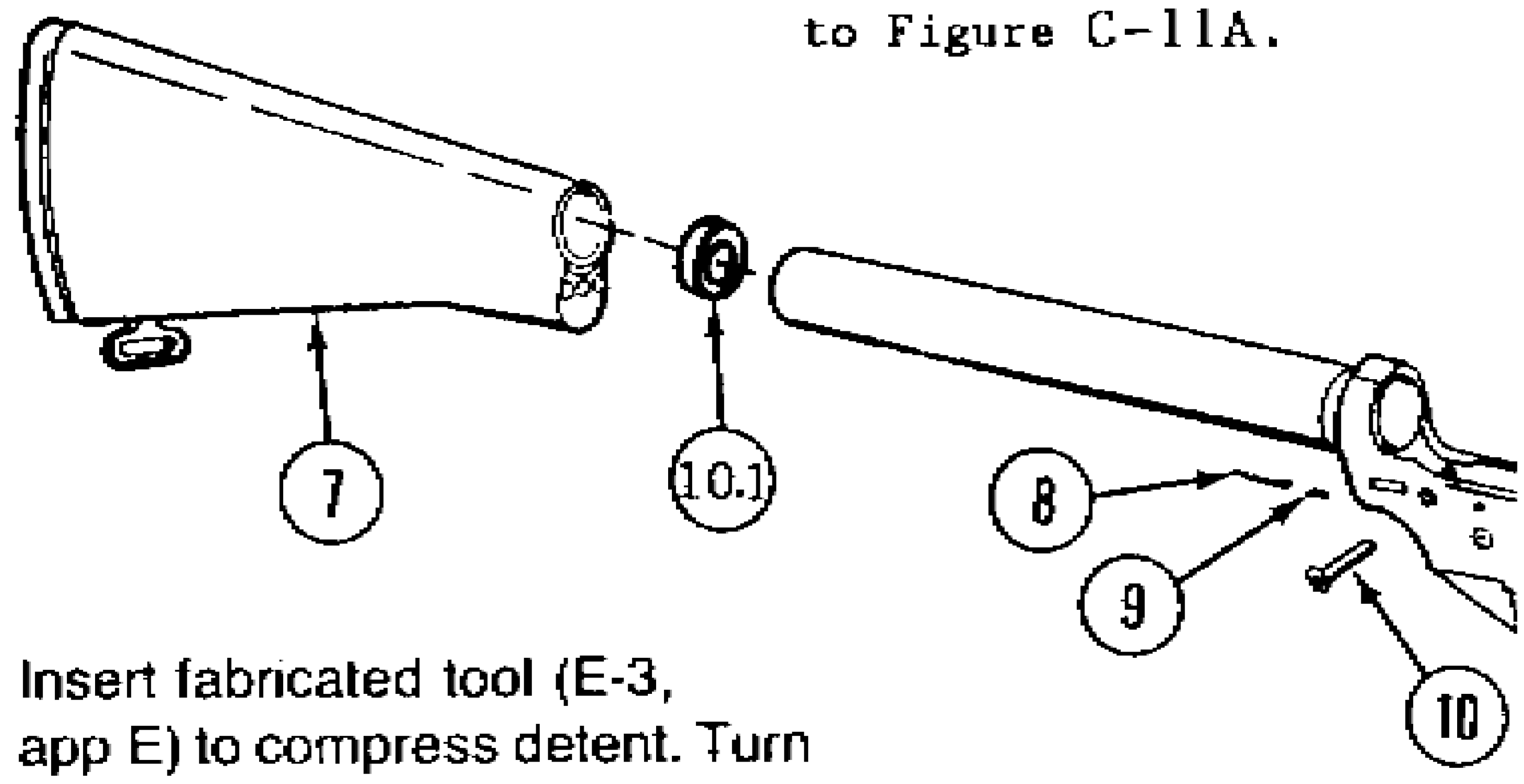
Do not interchange bolt assemblies or other components from one weapon to another. Doing so may result in injury to, or death of, personnel.

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Lower Receiver and Extension Assembly	a. Machine screw (1), and lock washer (2)	Using screwdriver, reach inside rifle grip and remove screw and lock washer.	
	b. Rifle grip (3), helical spring (4), and safety detent (5)	Carefully remove rifle grip and catch helical spring and safety detent to prevent loss.	
	c. Butt cap screw (6)	Remove.	

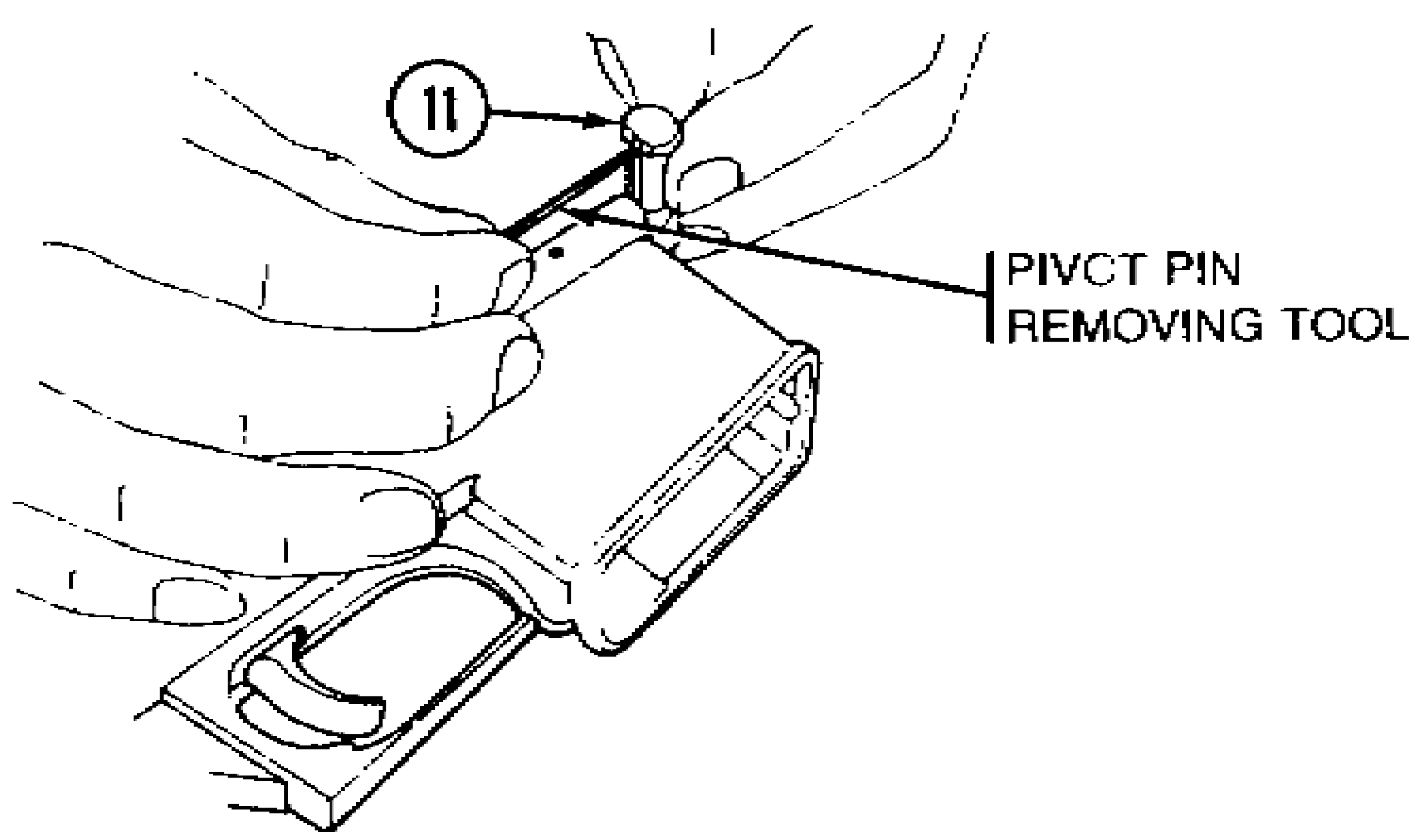


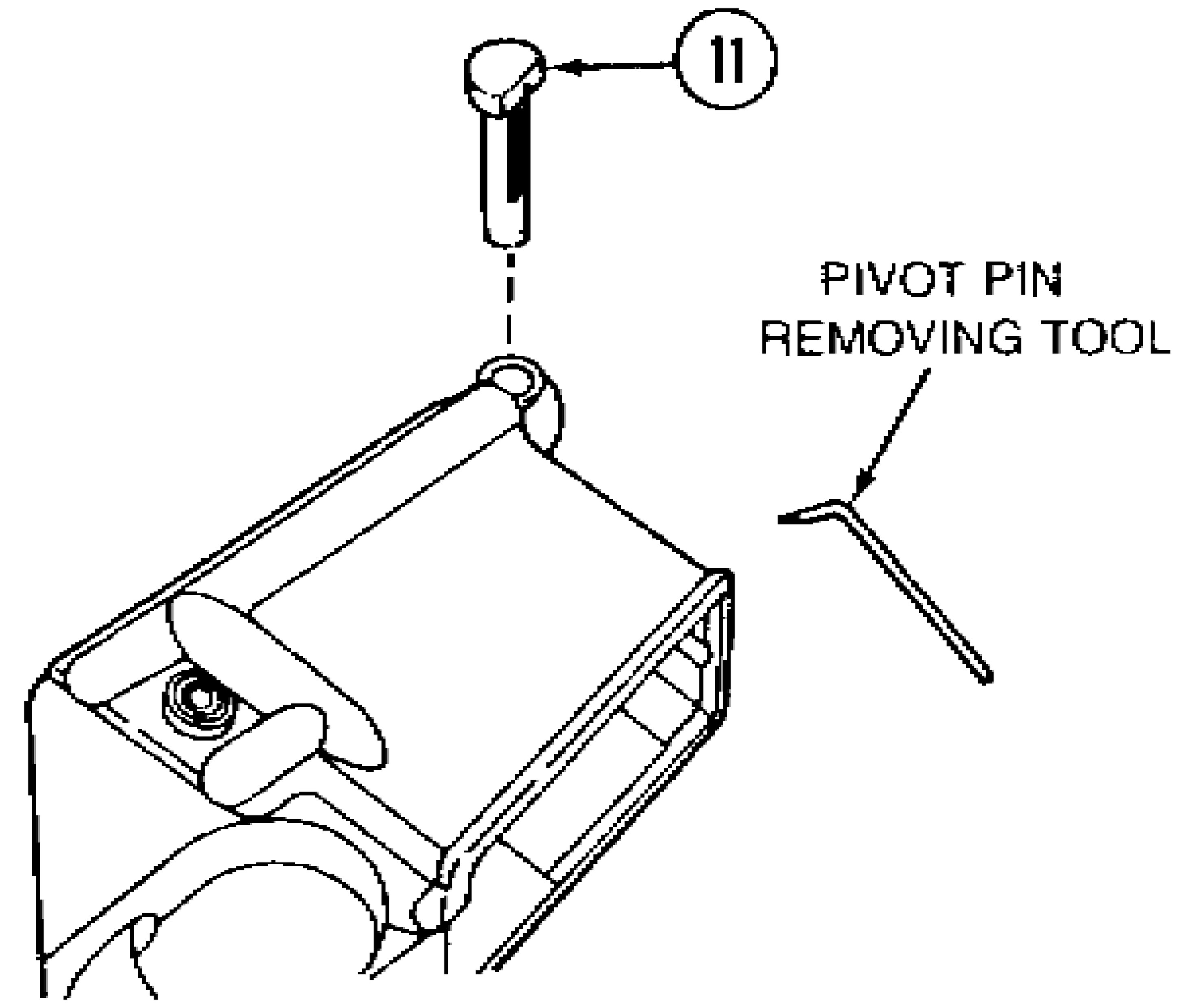


LOCATION	ITEM	ACTION	REMARKS
	d. Shoulder gun stock assembly (7), helical spring (8), takedown pin detent (9), takedown pin (10), and stepped spacer (10.1).	Remove stock carefully and catch helical spring, detent, takedown pin and stepped spacer to prevent loss.	Stepped spacer is required when utilizing buttstock assy PN 9349119. For dimensional identification of the buttstock, refer to Figure C-11A.

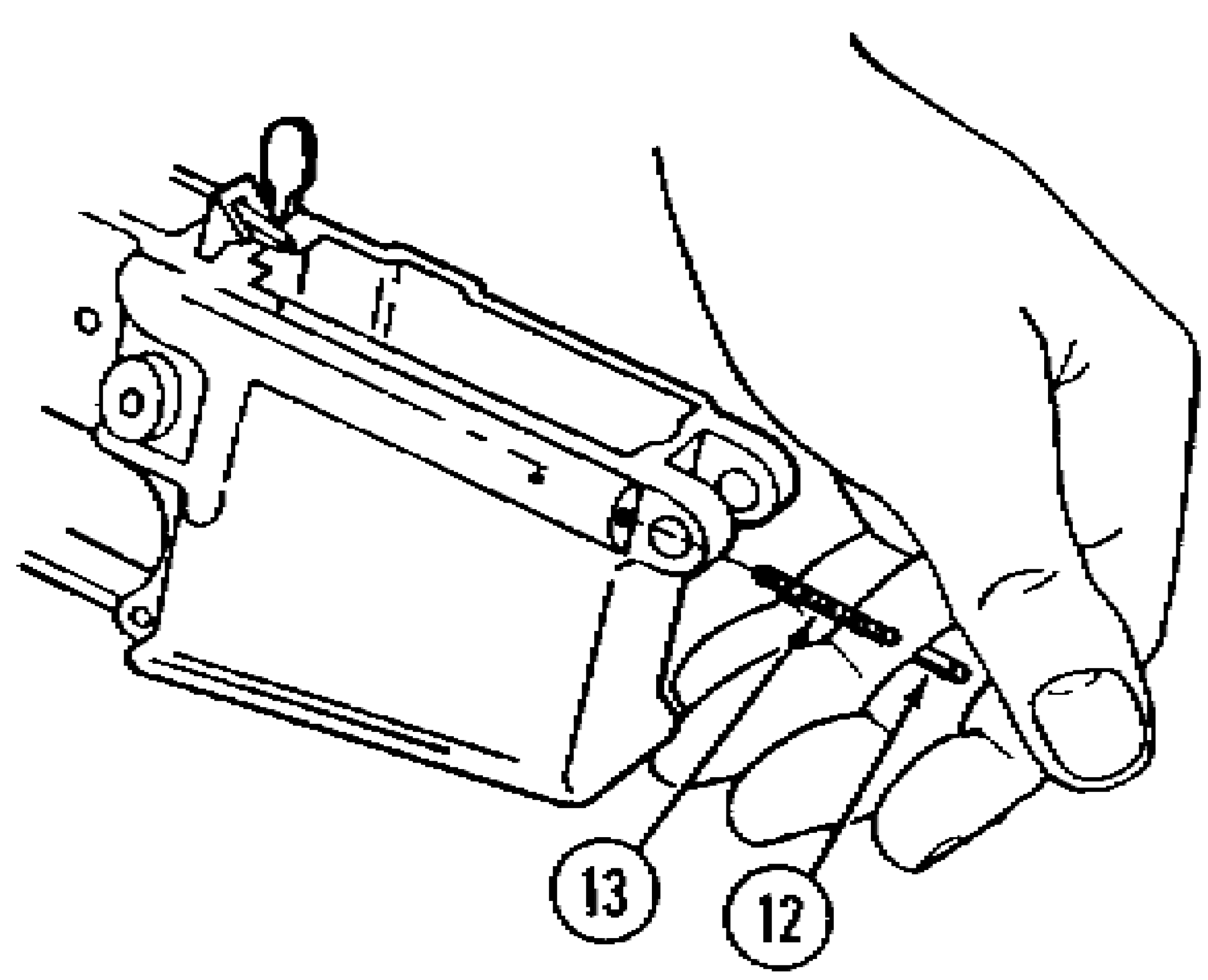


	e. Pivot pin (11)	Insert fabricated tool (E-3, app E) to compress detent. Turn pin a quarter-turn. Remove tool and pin.	





	f. Pivot pin detent (12) and helical spring (13)	Be sure to hold cupped hand in front of detent and helical spring to prevent loss of detent and spring.	

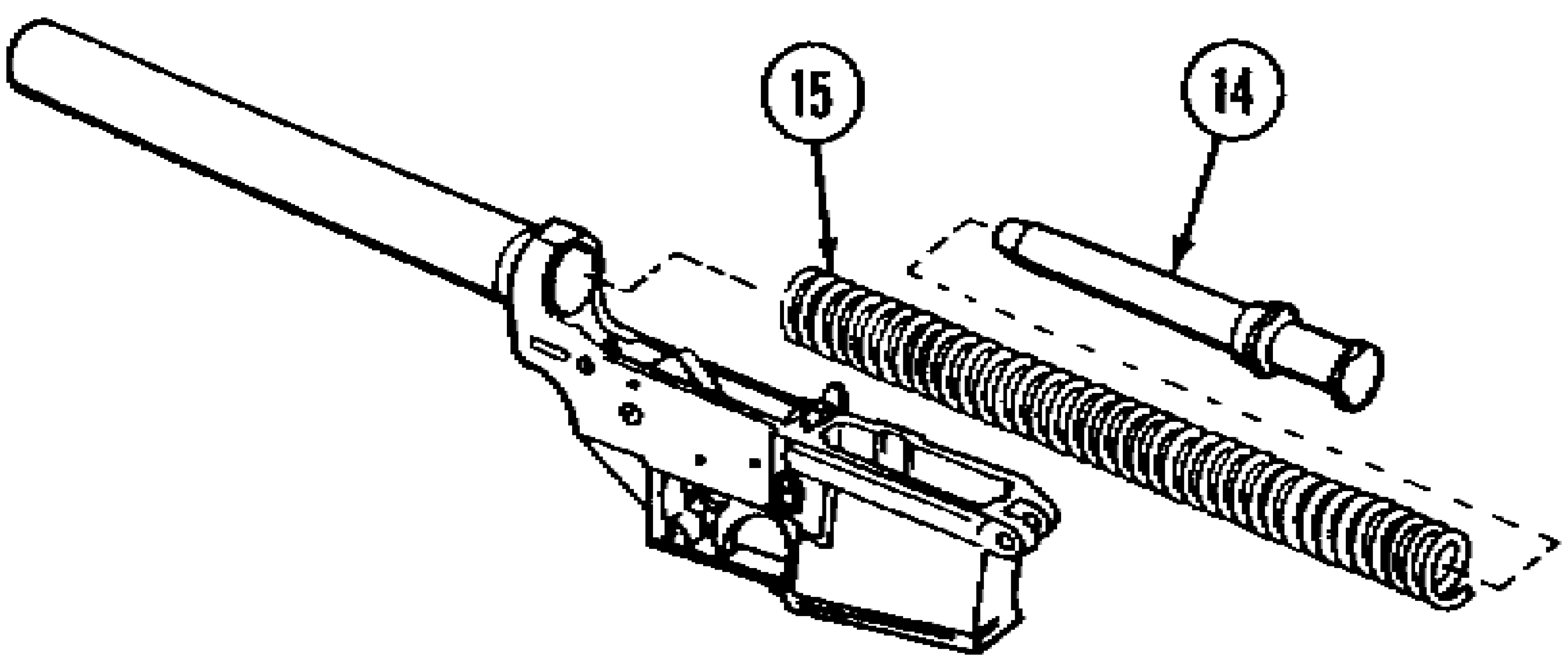


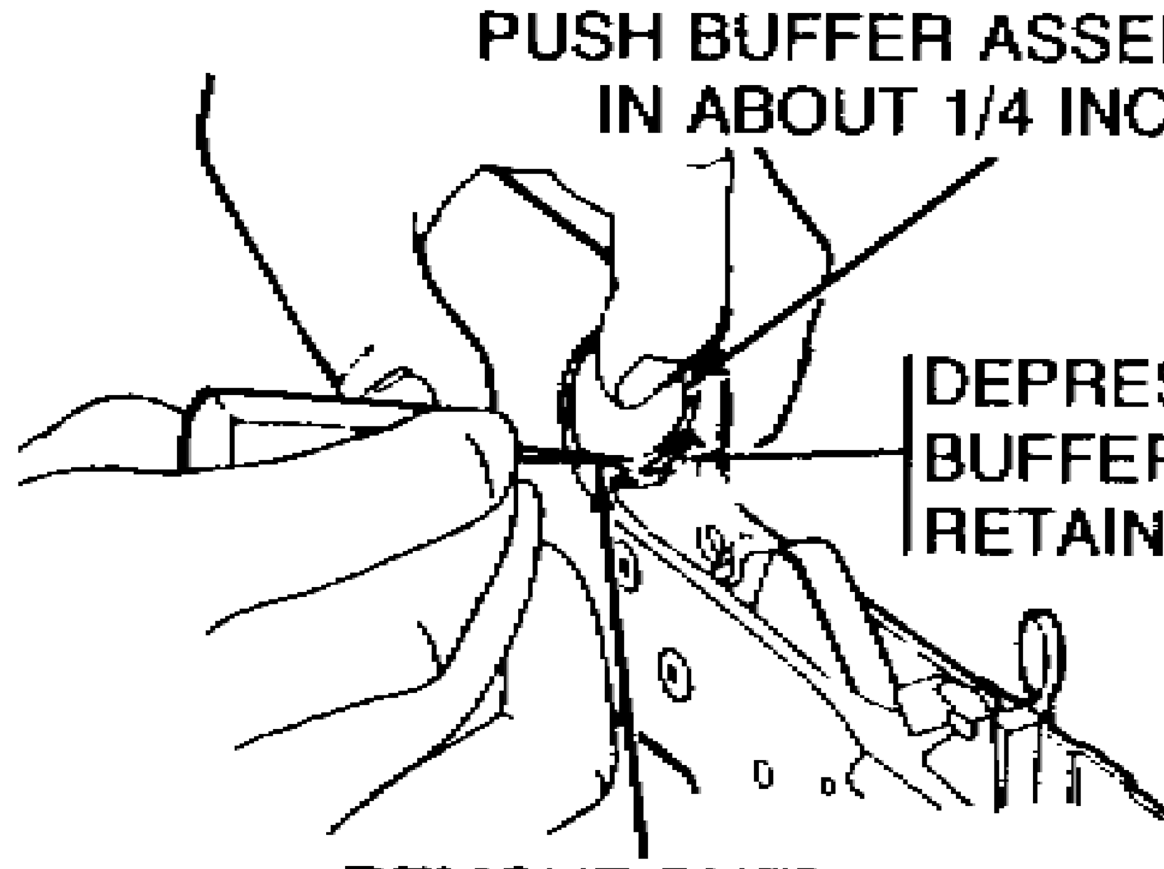
2-19. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY (CONT)

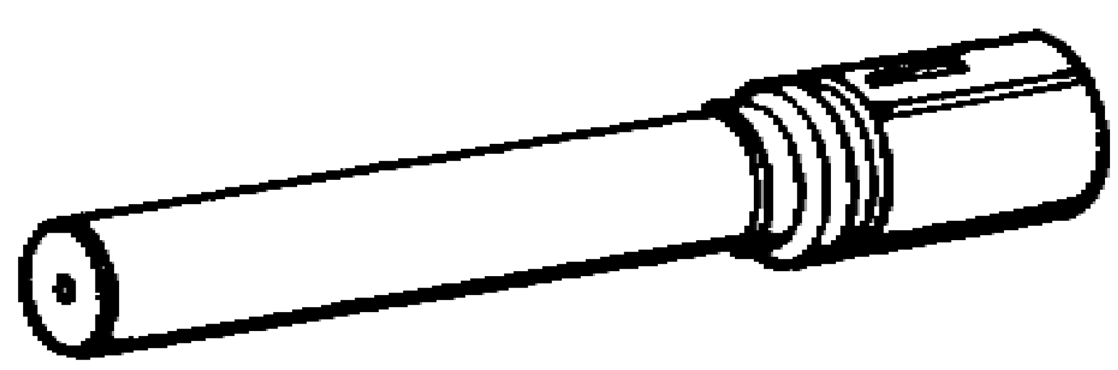
	g. Buffer assembly (14) and action spring (15)	Press buffer assembly in. Using screwdriver, depress buffer retainer and release buffer (14) and action spring (15). Remove buffer assembly (14) and action spring (15) from receiver while depressing the retainer.	





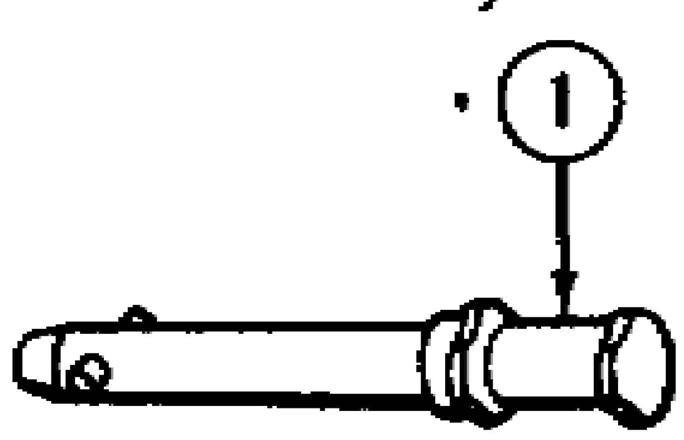
NOTE

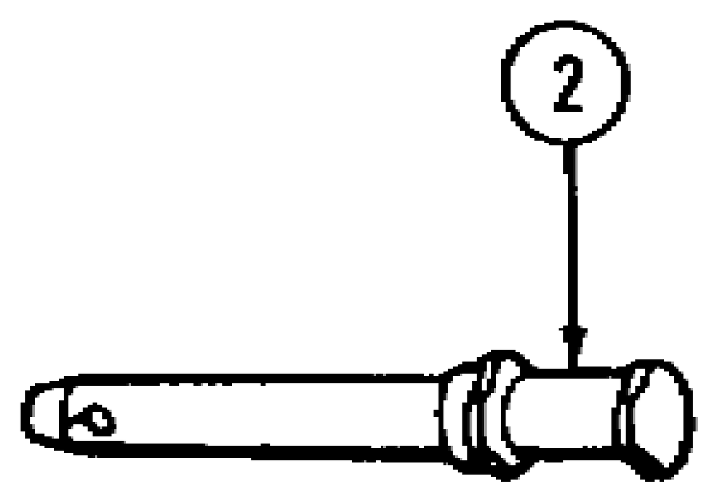
Early type buffer assembly *must be replaced*.

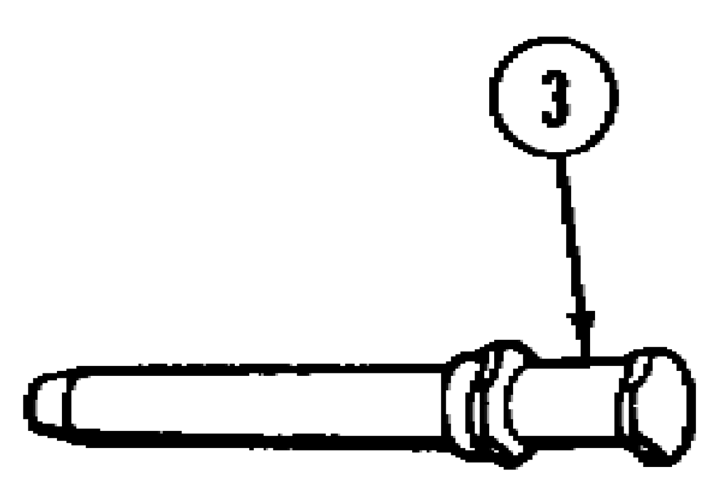


INSPECTION

Lower Receiver and Extension Assembly	a. Buffer assembly	The buffer assembly must not be cracked between hole and end of housing.	Some old buffers (1) have a pin through hole which protrudes equally on each side approximately 1/32 of an inch. Some buffers (2) have a hole in the housing but no pin. New buffers (3) do not have a hole in buffer body or a pin.



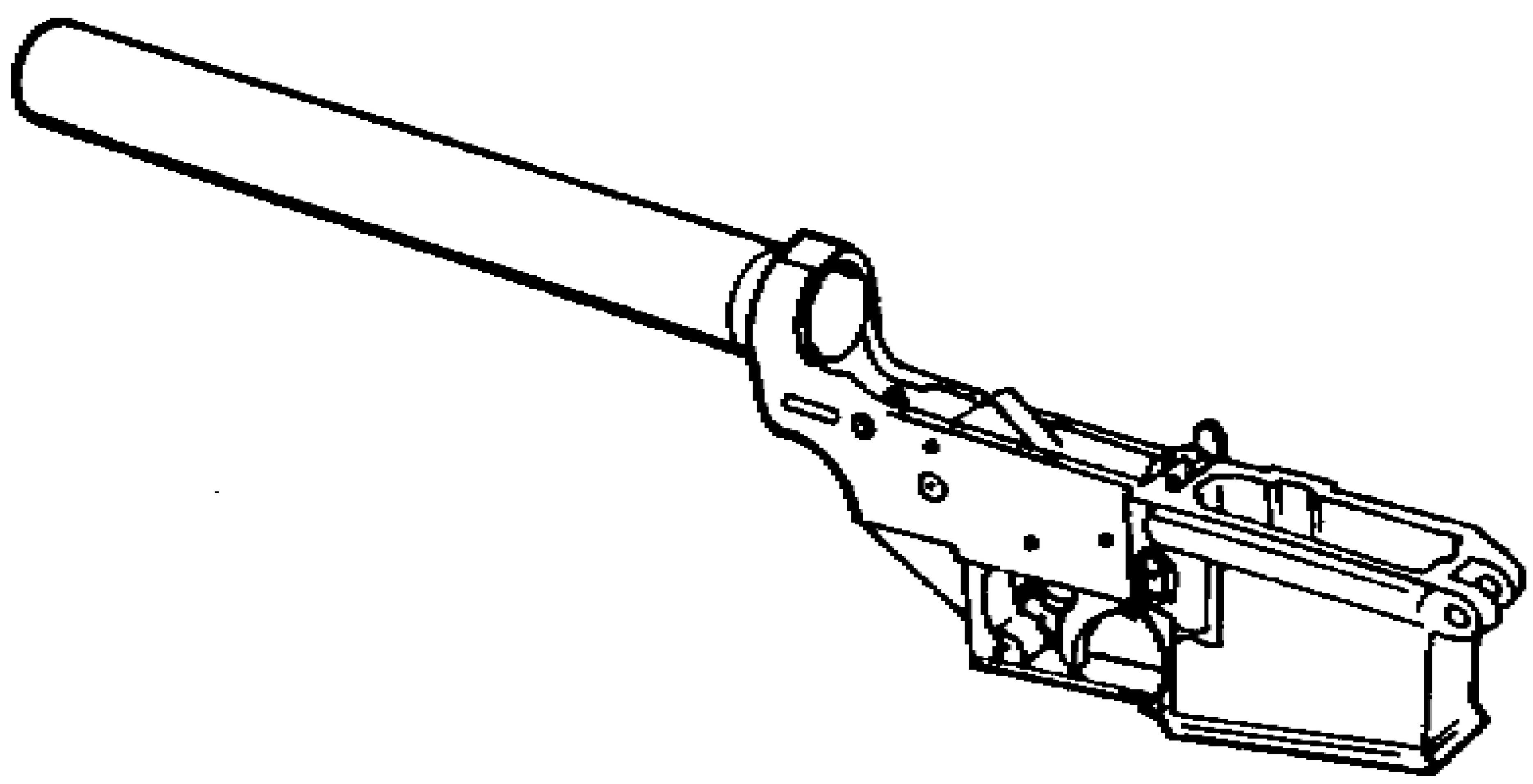




LOCATION	ITEM	ACTION	REMARKS
	b. Action spring	The free length of the action spring must be between 11 3/4 inches minimum and 13 1/2 inches maximum.	



LOCATION	ITEM	ACTION	REMARKS
	c. Lower receiver (without further disassembly)	Inspect serial number for legibility.	If the serial number is hard to read, notify support maintenance.



NOTE

Only general support maintenance is authorized to restamp the serial number.

LOCATION	ITEM	ACTION	REMARKS
		Inspect for missing or damaged parts. Inspect finish of lower receiver for shiny spots.	Touch up with solid film lubricant.

REPAIR

LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	All authorized items	Replace if unserviceable.	Perform test on page 2-44. Test must not fail. Evacuate any damaged parts to direct support maintenance.

LUBRICATION

LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	Use CLP	Apply a light coat of CLP (item 5, app D) on all metal components.	

2-19. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

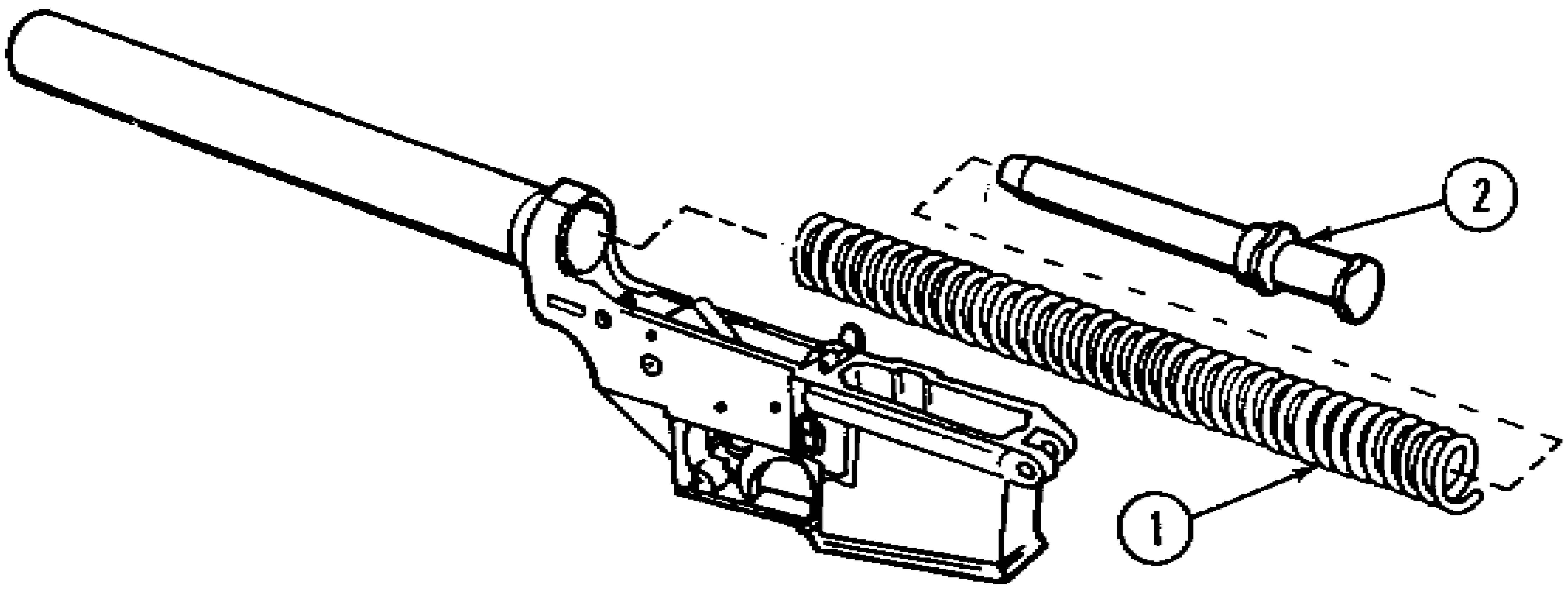
REASSEMBLY

WARNING

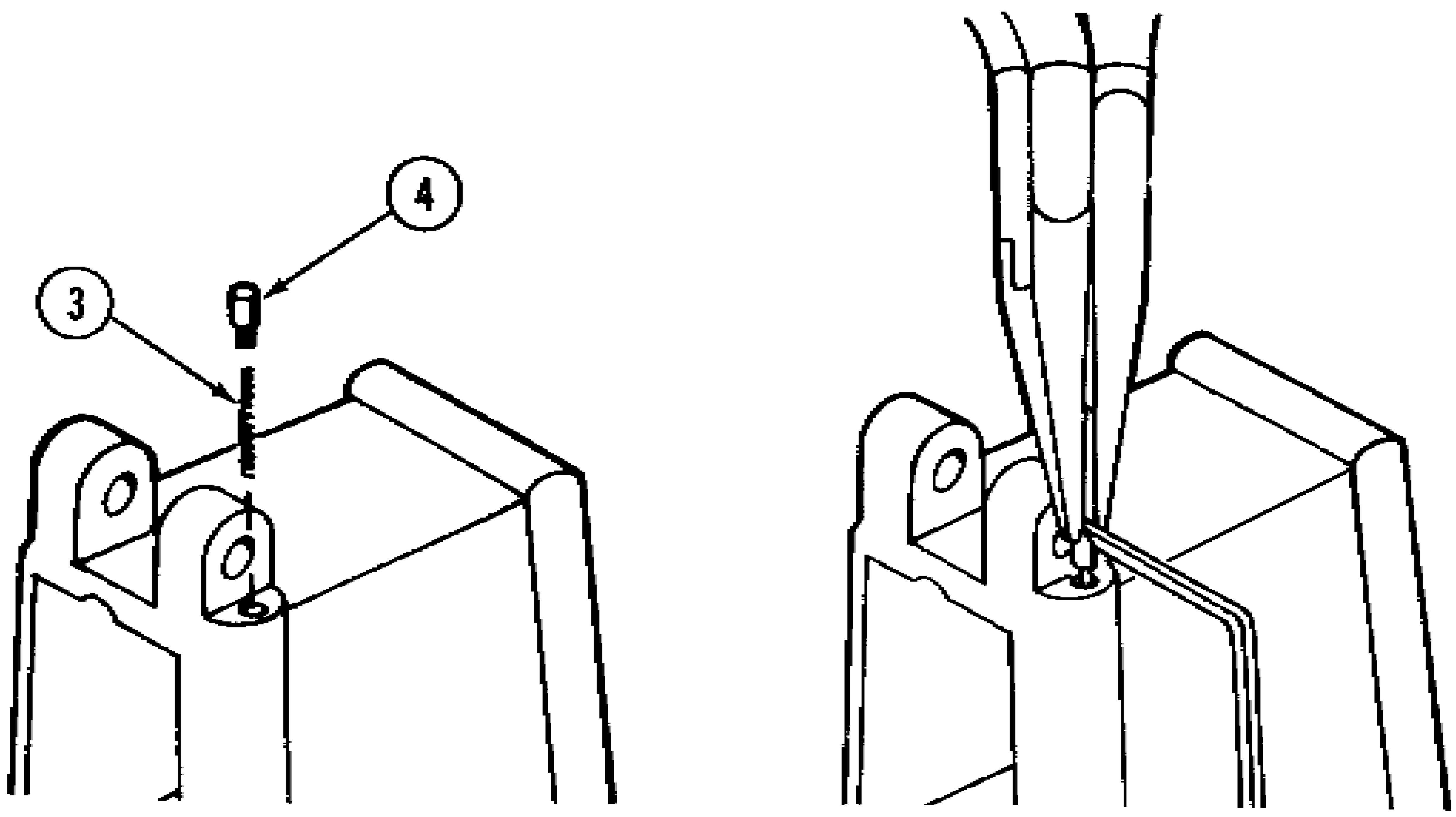
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

Do not interchange bolt assemblies or other components from one weapon to another. Doing so may result in injury to, or death of, personnel.

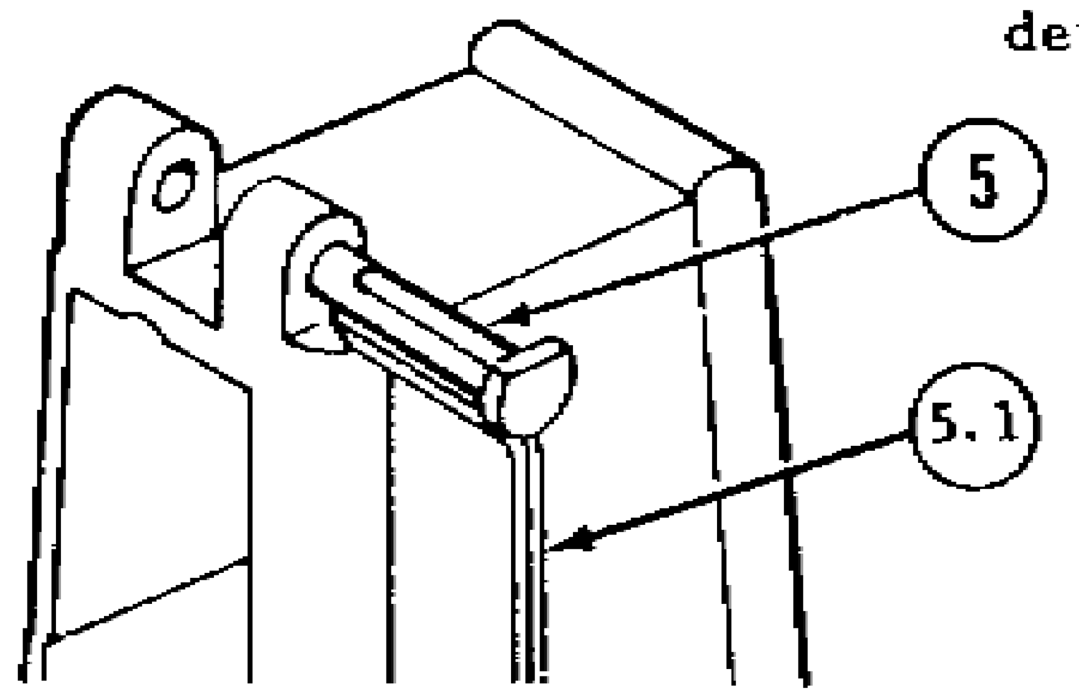
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	a. Action spring (1) and buffer assembly (2)	Press in until retainer snaps up and holds action spring and buffer assembly in place.	



LOCATION	ITEM	ACTION	REMARKS
	b. Helical spring (3), pivot pin detent (4), and pivot pin (5)	Insert helical spring in hole. Position detent with needle-nose pliers. Depress detent with fabricated tool (E-3, app E). Remove pliers.	**NOTE** Rounded end of detent must be in the groove of the pivot pin when assembly is complete.

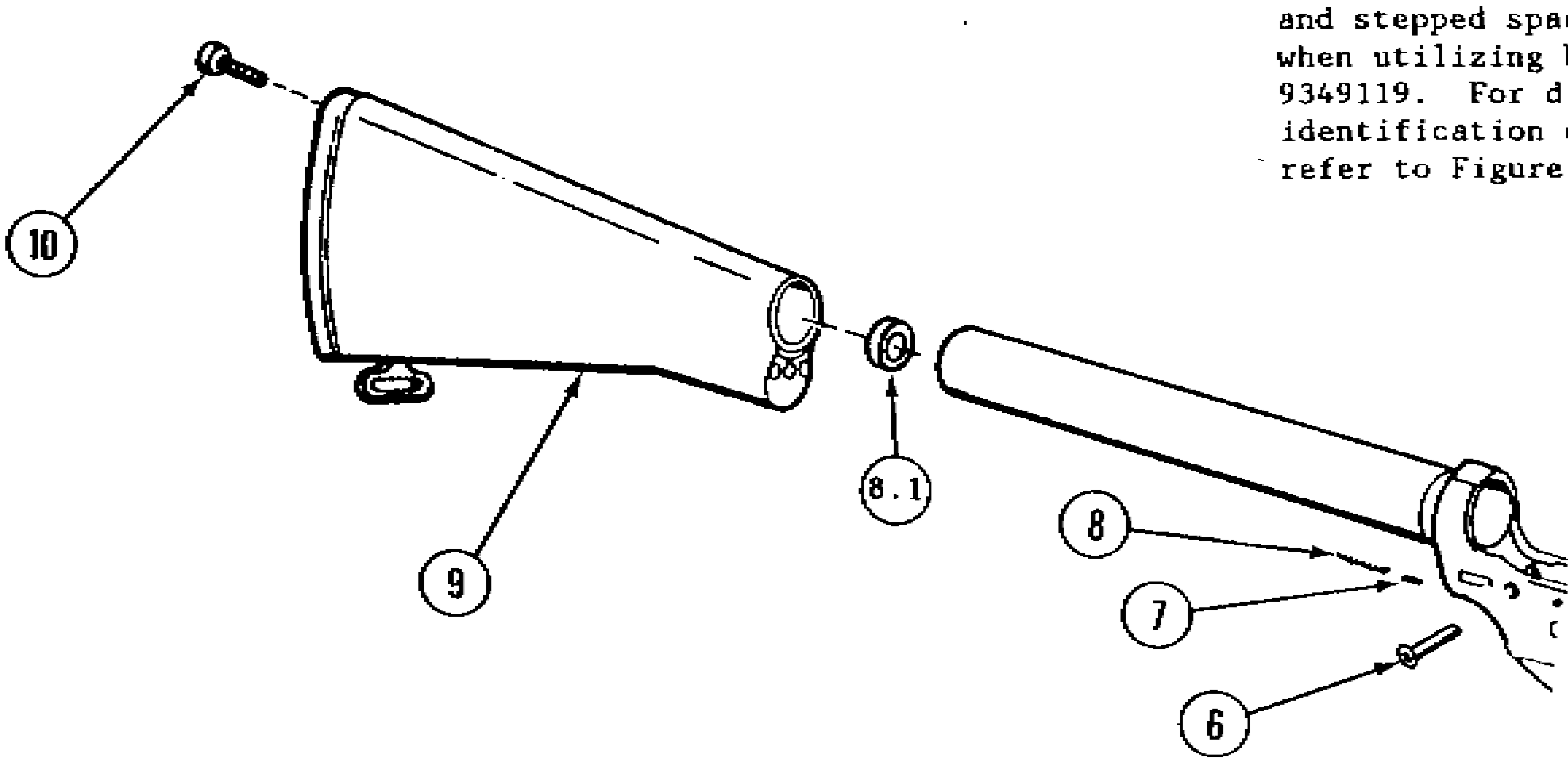


LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly		Position pivot pin (5) to keep detent depressed while removing fabricated tool (5.1) (E-3, app E). Slide pin into hole. Rotate pin to receive detent.	



LOCATION	ITEM	ACTION	REMARKS
	c. Takedown pin (6), takedown pin detent (7), helical spring (8), stepped spacer (8.1) shoulder gun stock assembly (9), and butt cap screw (10).	Install takedown pin with groove to the rear. Install detent and spring from the rear. Install spacer on receiver extension. Begin to install buttstock assy. Carefully compress the spring with stock and secure the stock in place with the butt cap screw.	**CAUTION** Do not kink the detent spring (8) during assembly. **NOTE** Rounded end of detent must be in the groove of the takedown pin when assembly is complete.

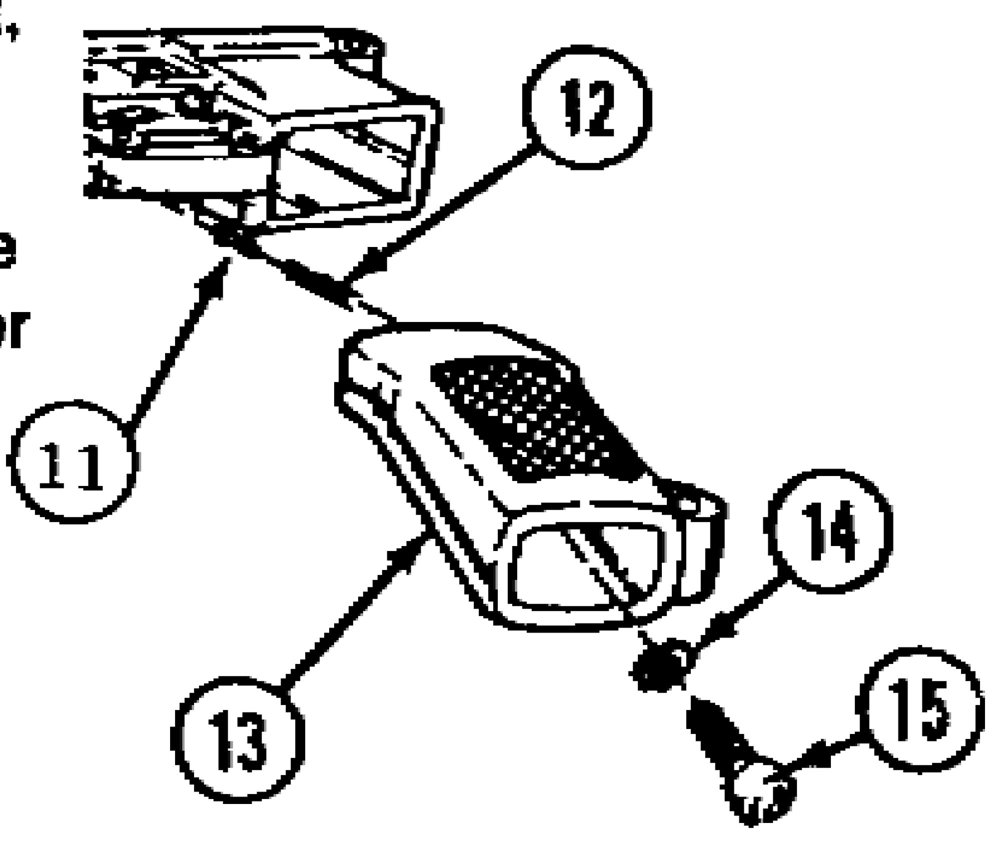
Butt cap screw PN 9349128 and stepped spacer is required when utilizing buttstock assy 9349119. For dimensional identification of the buttstock, refer to Figure C-11A.



2-19. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY (CONT)

LOCATION	ITEM	ACTION	REMARKS
	d. Safety detent (11), helical spring (12), rifle grip (13), lock washer (14), and machine screw (15)	Install detent, pointed end first, and spring from the bottom. Carefully compress the spring with the rifle grip and secure the grip in place with the lock washer and screw.	

2-20. SHOULDER GUN STOCK ASSEMBLY.

This task covers:
a. Disassembly
b. Inspection
c. Repair
d. Lubrication
e. Reassembly

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)

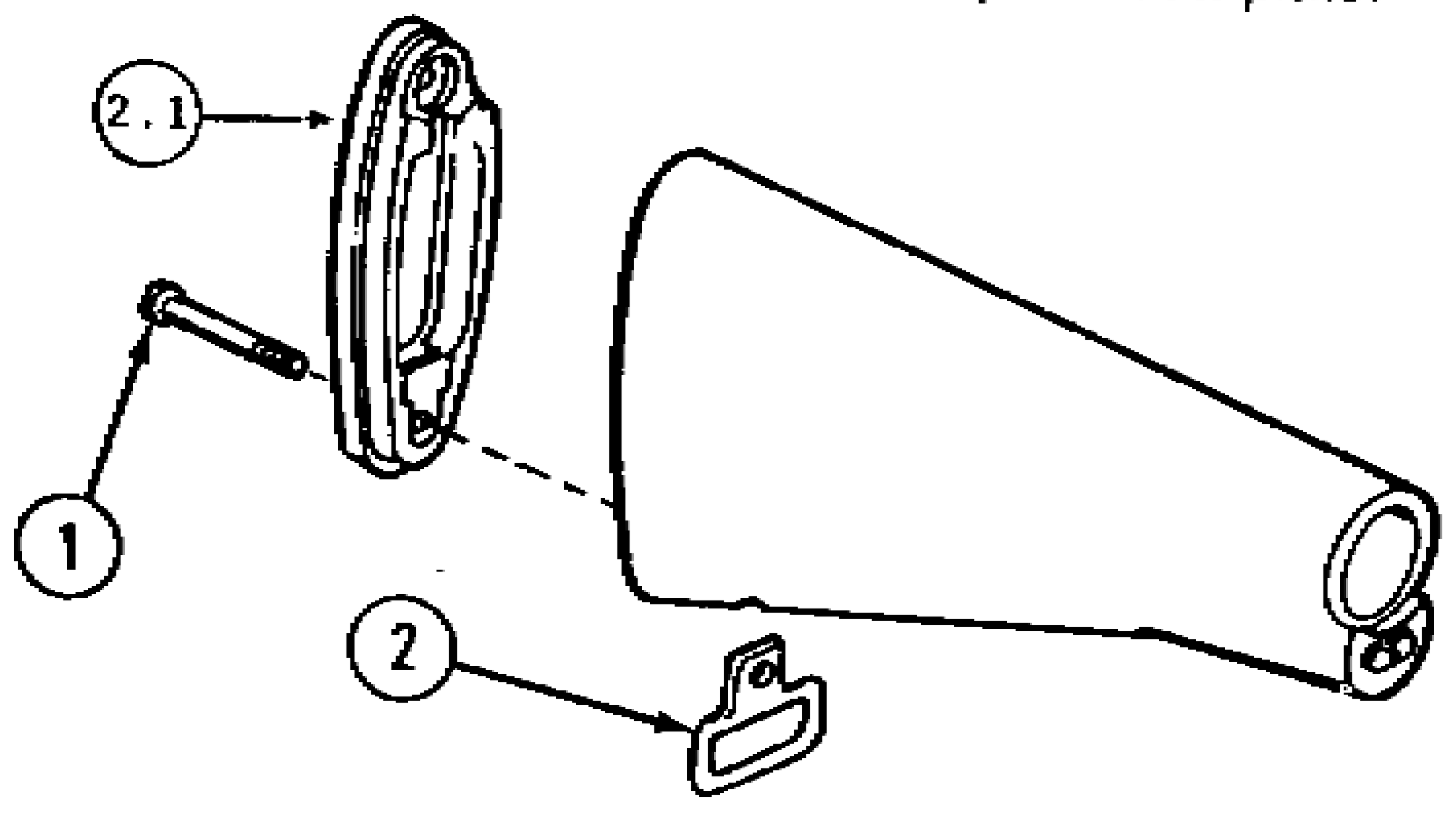
NOTE: Buttstock PN 9349121 is 5/8 longer than buttstock PN 8448651. For diminsional identification refer to Figure C-11A.

Materials/Parts
Cleaner, lubricant and preservative (CLP) (item 5, app D)

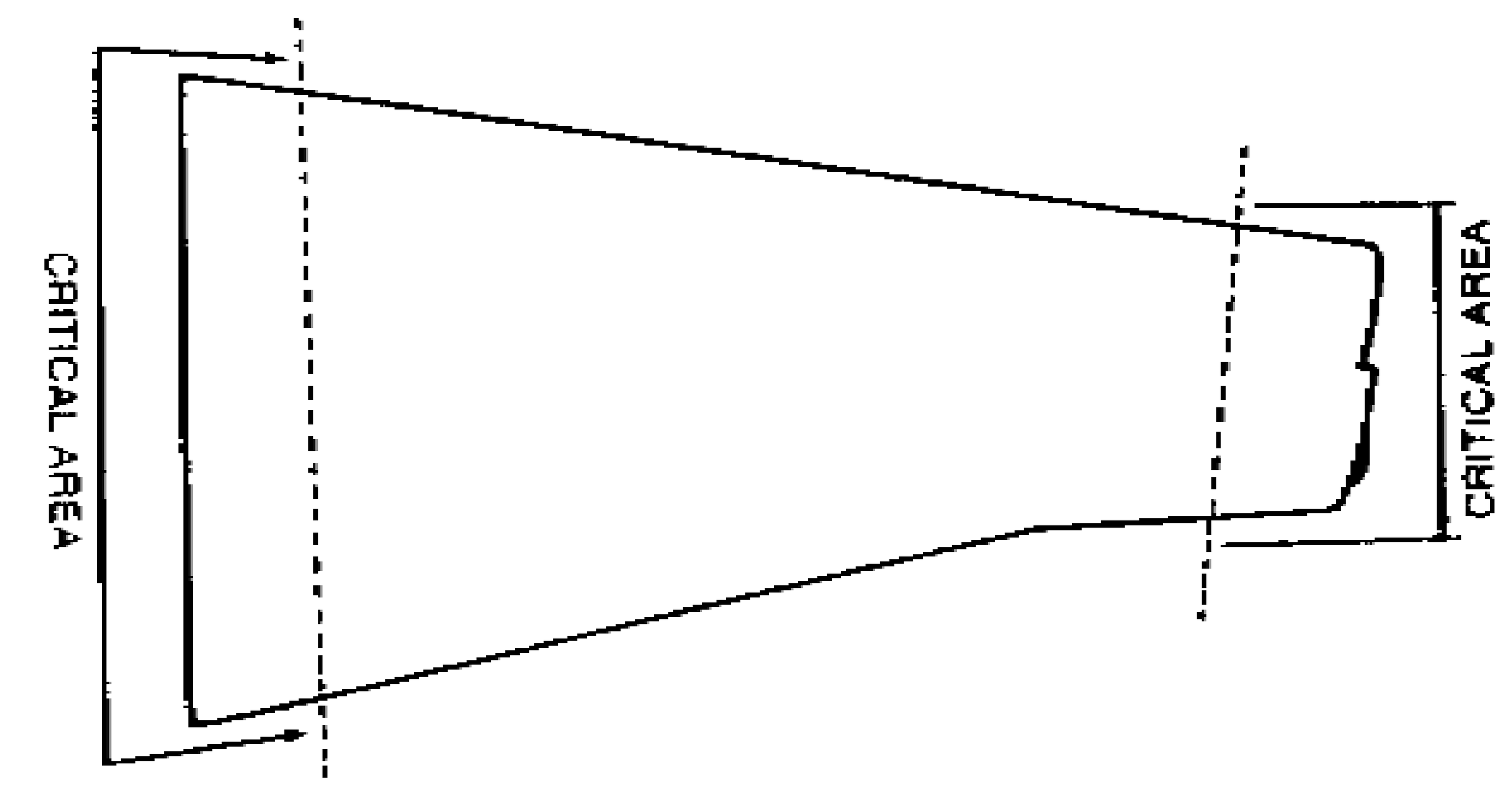
LOCATION	ITEM	ACTION	REMARKS

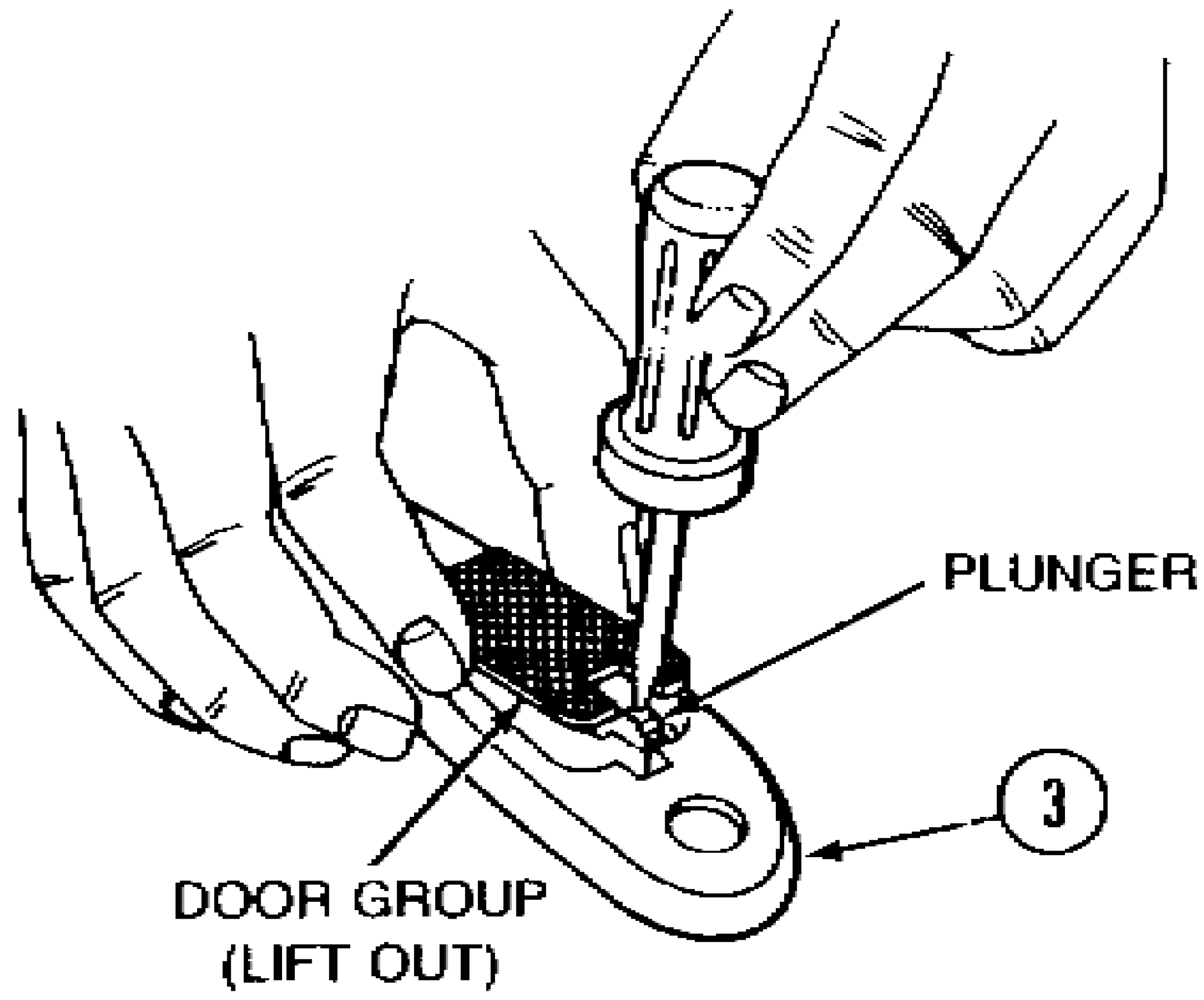
DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Shoulder Gun Stock Assembly	a. Self-locking screw (1), rear sling swivel (2) and butt plate (2.1).	Using screwdriver, remove self-locking screw, rear sling swivel, and butt plate.	Self-locking screw PN 9349120 is required when utilizing buttstock assy 9349119. For dimensional identification of buttstock, refer to Figure C-11A.

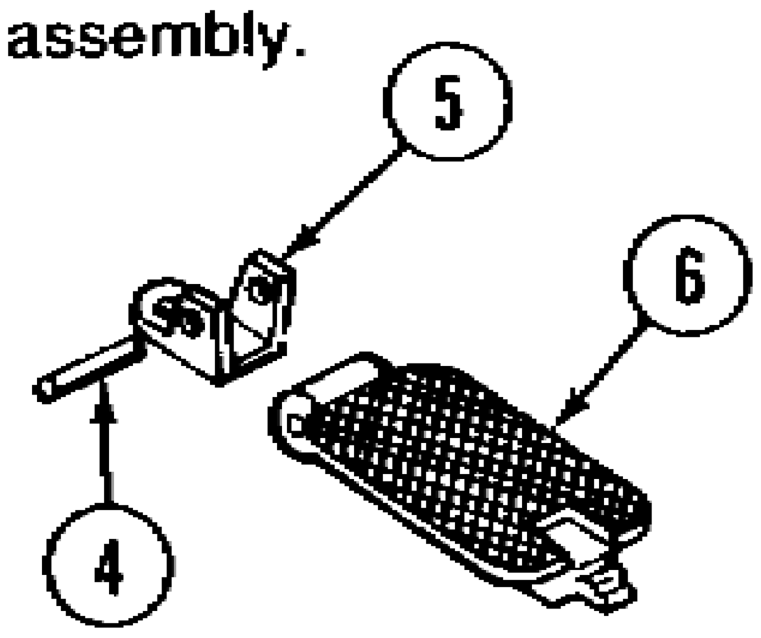


LOCATION	ITEM	ACTION	REMARKS
	b. Butt plate (3)	Push down on plunger with screwdriver and lift door assembly out of butt plate.	





	c. Straight pin (4), hinge (5), and door assembly (6)	Remove straight pin and separate hinge and door assembly.	



INSPECTION

Shoulder Gun Stock Assembly	Stock	Inspect stock for cracks. Report cracked stocks and evacuate to direct support.	

REPAIR

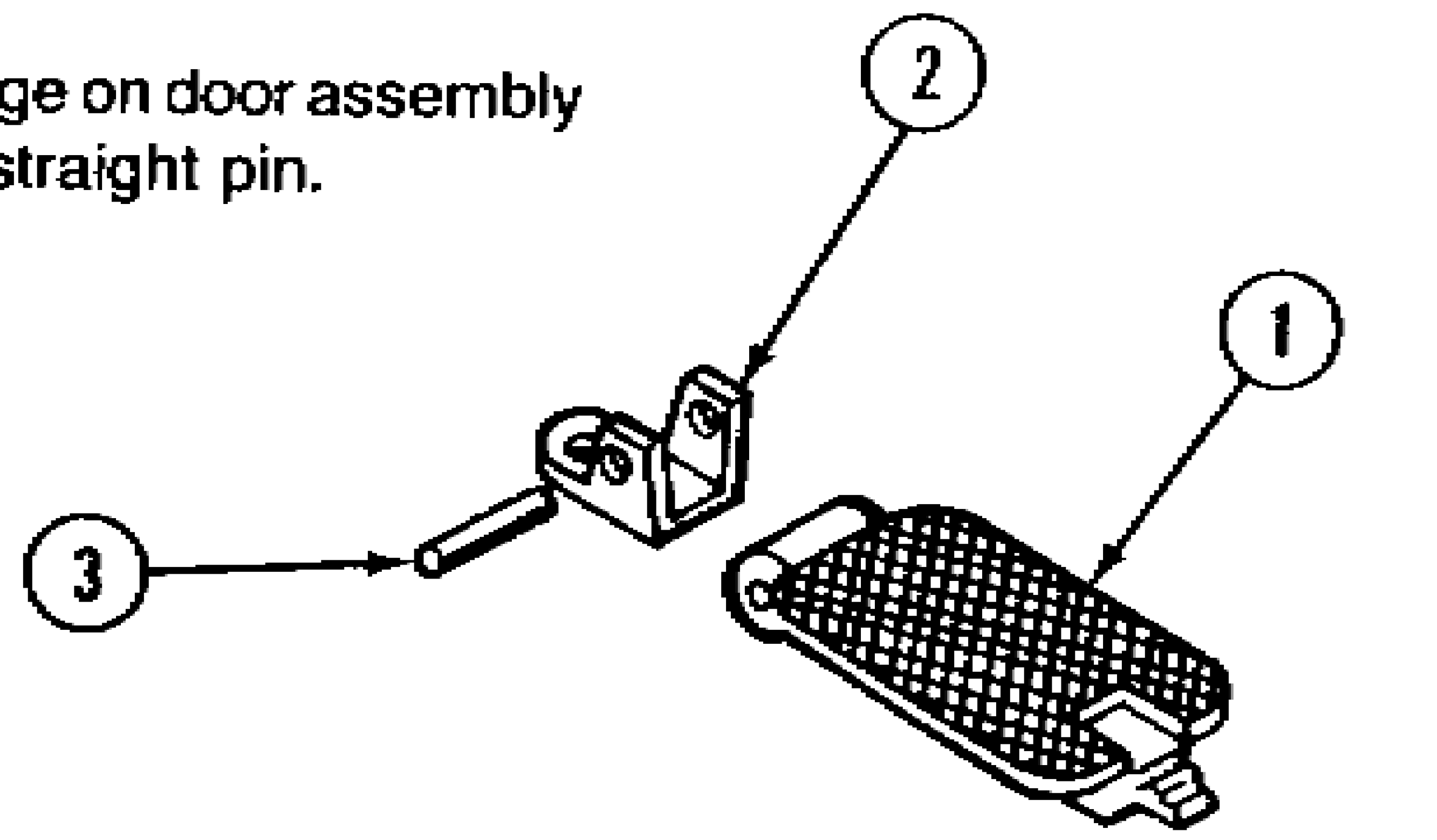
Shoulder Gun Stock Assembly	All authorized items	Replace unserviceable items.	Unserviceable items are those items which are damaged.

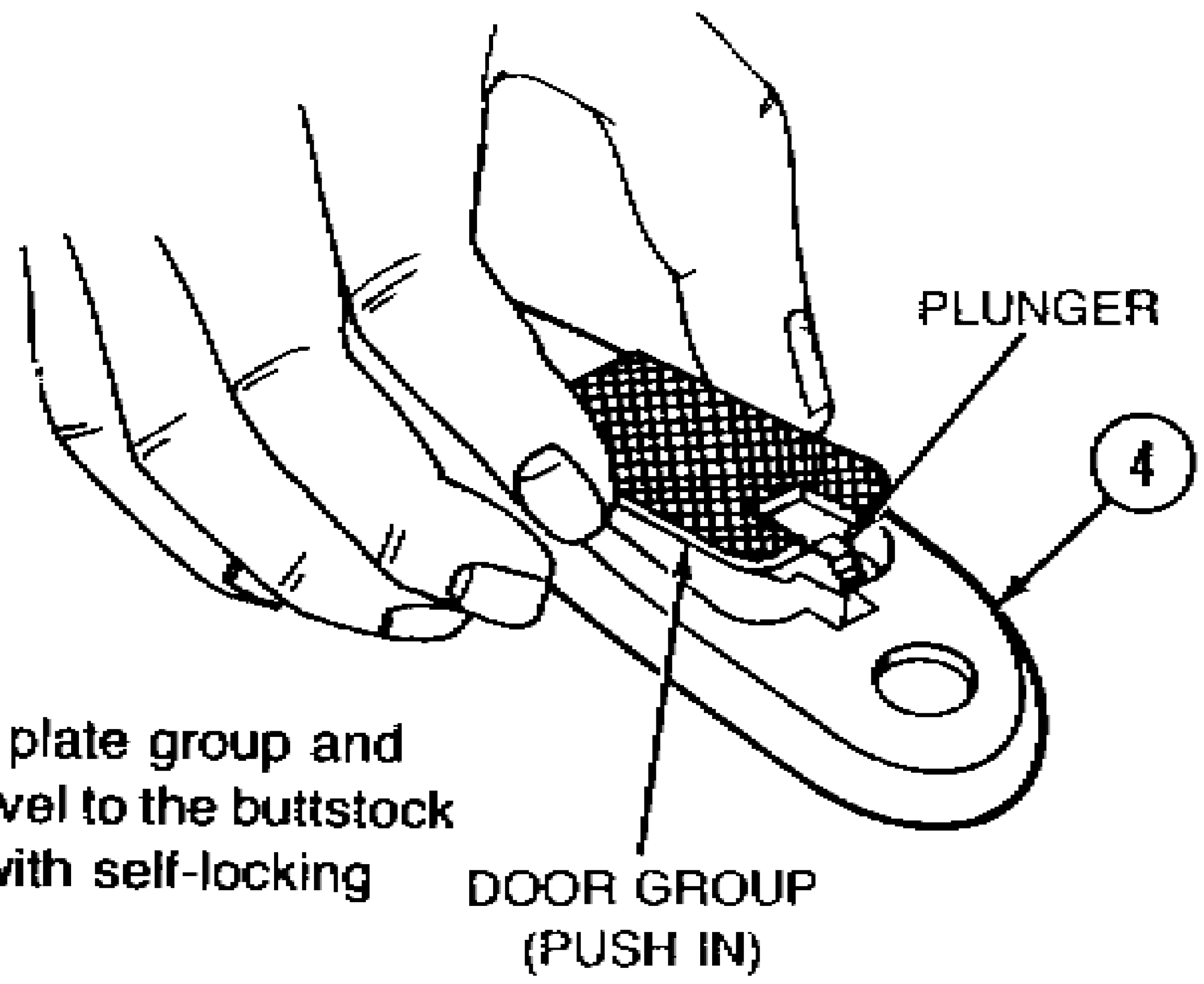
LUBRICATION

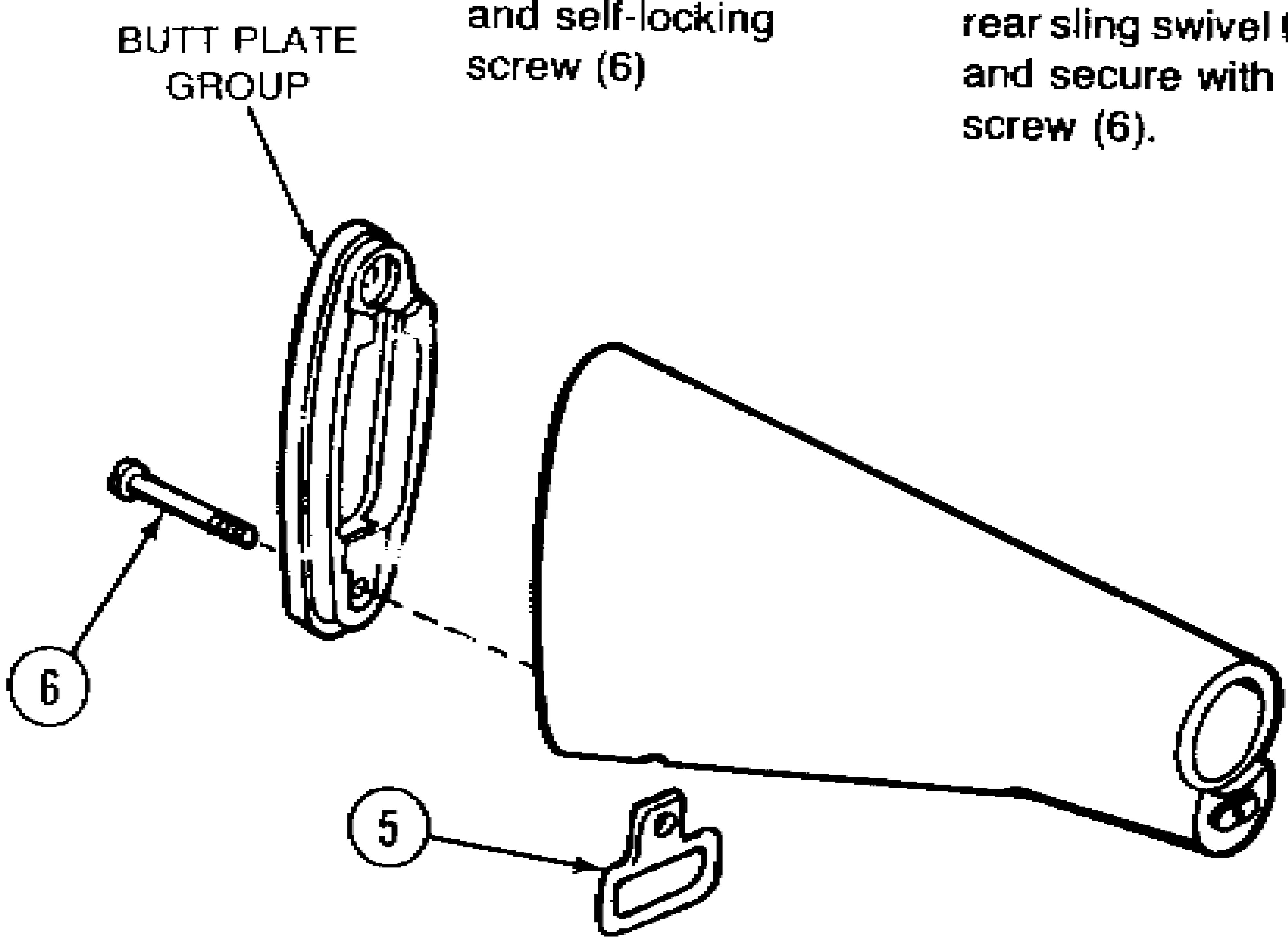
Shoulder Gun Stock Assembly	Stock	Lubricate all metal components with CLP (item 5, app D).	

2-20. SHOULDER GUN STOCK ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
REASSEMBLY			
Shoulder Gun Stock Assembly	a. Door assembly (1), hinge (2), and straight pin (3)	Position hinge on door assembly and install straight pin.	
	b. Butt plate (4)	Install door assembly into butt plate and press plunger to lock.	
	c. Rear sling swivel (5) and self-locking screw (6)	Position butt plate group and rear sling swivel to the buttstock and secure with self-locking screw (6).	







2-21. MAJOR COMPONENTS OF M16/M16A1 RIFLE.

This task covers:
a. Reassembly
b. Test
c. Stowage

INITIAL SETUP

References
TM 9-1005-249-10

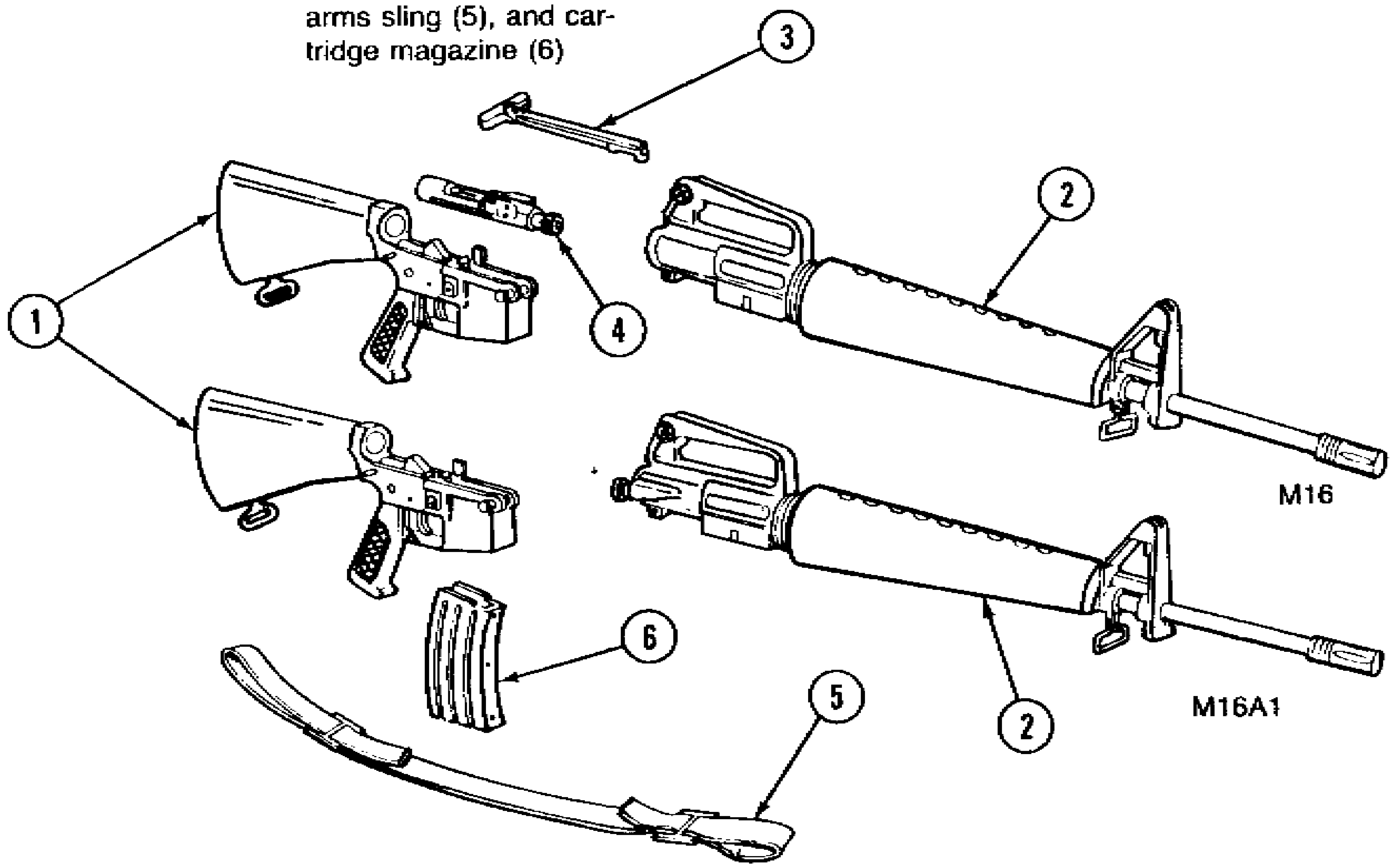
Equipment Conditions
Page 2-16, weapon disassembled into major components.

General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

Do not interchange bolt assemblies or components from one weapon to another. Doing so may result in injury to, or death of, personnel.

Do not keep live ammunition near the work area.

LOCATION	ITEM	ACTION	REMARKS
REASSEMBLY			
Weapon	Lower receiver and extension assembly (1), upper receiver and barrel assembly (2), charging handle assembly (3), bolt carrier assembly (4), small arms sling (5), and cartridge magazine (6)	Install.	Refer to TM 9-1005-249-10.



2-21. MAJOR COMPONENTS OF M16/M16A1 RIFLE (CONT).

LOCATION	ITEM	ACTION	REMARKS
TEST			
Function test as follows: Weapon	a. Charging handle assembly	Pull to rear. Check that chamber is clear. Let bolt and bolt carrier close.	Leave hammer in cocked position. Do not pull trigger.
	b. Selector lever	Place in SAFE position and pull trigger.	Hammer should not fall.
		WARNING If the weapon fails the following test, continued use of the weapon could result in injury to or death of personnel. **NOTE** For the purpose of the following test "SLOW" is defined as 1/4 to 1/2 the normal rate of trigger release.	
	c. Selector lever	Place in SEMI position and pull trigger.	Hammer should fall.
		Hold trigger to the rear, charge weapon, and release the trigger with a slow, smooth motion, without hesitations or stops, until the trigger is fully forward.	Hammer should not fall.
		Repeat the SEMI position test five times, the weapon may not malfunction every time.	If the weapon malfunctions during any of these five tests, evacuate it to Direct Support Maintenance for repair.
	d. Selector lever	Place in AUTO position. Charge weapon and squeeze trigger.	Hammer should fall.
		Hold trigger to the rear, charge weapon, and release trigger. Squeeze trigger.	Hammer should not fall. Automatic sear should have released hammer while holding trigger in the squeezed position before releasing and re-squeezing the trigger.
STOWAGE			
Weapon	Rifle	Prior to stowing the rifle in arms room, perform the following procedures:	
		Clear.	Refer to TM 9-1005-249-10.
		Place selector in SEMI.	
		Squeeze trigger.	Hammer should fall.
		Close ejection port (dust) cover.	
		Place rifle in rack.	

CHAPTER 3
DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

CHAPTER OVERVIEW

Chapter 3 contains information and instructions to help keep the weapon in good repair. This chapter contains:

a. Repair Parts, Special Tools, TMDE, and Support Equipment
b. Service Upon Receipt
c. Troubleshooting
d. Decontamination of Rifles and Shop Area
e. Maintenance Procedures for the M16 and M16A1 Rifle
f. Preembarkation Inspection of Materiel in Units Alerted for Overseas Movement

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT

3-1. COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (TOE/MTOE) applicable to your unit.

3-2. SPECIAL TOOLS, TMDE, AND SUPPORT EQUIPMENT. Special tools required for direct support and general support are listed in appendix C and fabricated tools are listed and illustrated in appendix E.

3-3. REPAIR PARTS. Repair parts are listed and illustrated in appendix C.

Note

Bolt assemblies, and/or barrel assemblies may be interchanged, at the Direct Support Maintenance level, from one rifle to another under the provisions of the note at the bottom of page C-2. If these parts are interchanged, the weapon must be checked/inspected as depicted in paragraphs 3-10, 3-11, and 3-13. While performing these checks/inspections pay special attention to the headspace requirements depicted on page 3-40.

Section II. SERVICE UPON RECEIPT

3-4. GENERAL.

a. Inspect the weapon for damage incurred during shipment. If the equipment has been damaged, report the damage on SF Form 364, Report of Discrepancy (ROD).

b. Check the weapon against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions in DA PAM 738-750.

c. Check to see whether the equipment has been modified.

d. Check to see if all MWO's have been applied.

3-5. SERVICE UPON RECEIPT OF MATERIEL.
Refer to the following table.

SERVICE UPON RECEIPT - M16 AND M16A1 RIFLE

LOCATION	ITEM	ACTION	REMARKS
M16, M16A1 Rifle	Charging handle	Clear the weapon.	Refer to TM 9-1005-249-10.
	WARNING To avoid injury to your eye, use care when removing and installing spring-loaded parts.		
	Bolt carrier assembly and bolt assembly	Remove.	Refer to TM 9-1005-249-10.
	All components	Visually inspect for proper assembly, damage, or missing parts.	Refer to TM 9-1005-249-10.
		Clean and lubricate.	
	Bolt carrier assembly and bolt assembly	Reassemble.	Refer to TM 9-1005-249-10.
		Hand function to assure proper operation.	
	Cartridge magazine	Insert empty magazine and pull the bolt to the rear. Check magazine for positive retention and check functioning of bolt catch by assuring that bolt locks to the rear with empty magazine inserted.	Refer to TM 9-1005-249-10.

Section III. TROUBLESHOOTING

3-6. GENERAL.

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the 5.56-mm Rifle M16 and M16A1. Each malfunction for the individual component, unit, or system is followed by a list of tests or inspections which will help you to determine the corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, see individual repair sections for maintenance instructions on each major assembly.

3-7. TROUBLESHOOTING PROCEDURES.
Refer to troubleshooting table for malfunctions, tests, and corrective actions. The symptom index is provided for a quick reference of symptoms covered in the table.

SYMPTOM INDEX

TROUBLESHOOTING

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

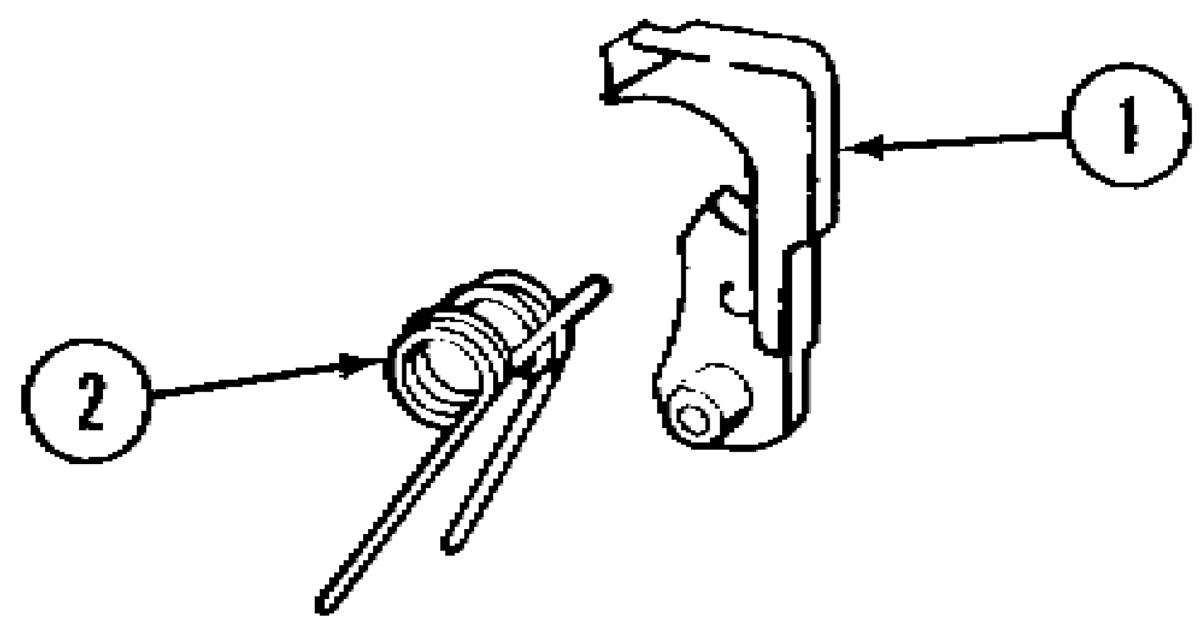
1. FAILURE TO FIRE.

Step 1. Broken hammer (1).

Replace hammer (1).

Step 2. Weak or broken hammer spring (2).

Replace spring (2).

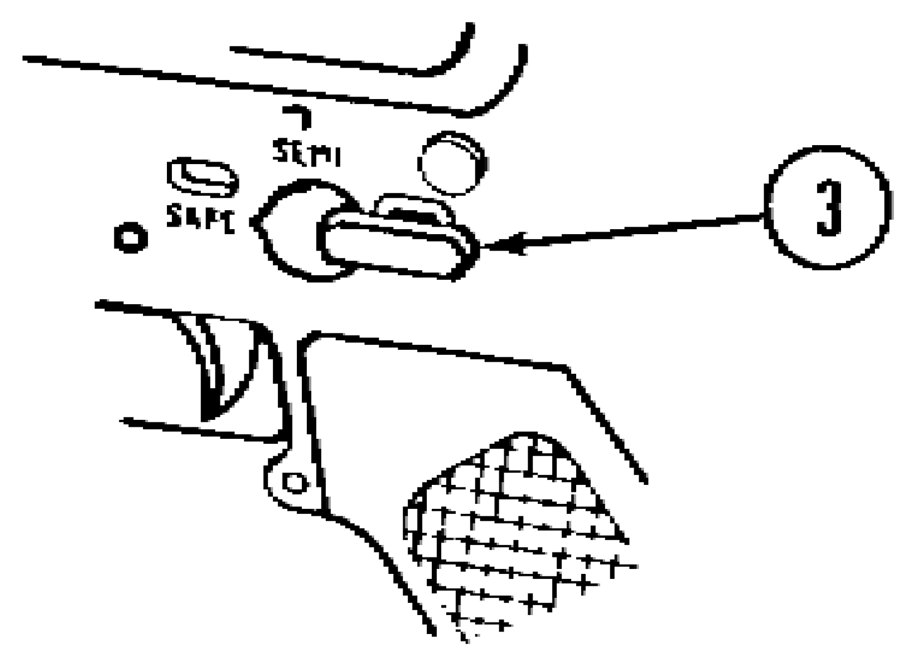


Step 3. Hammer spring (2) improperly assembled.

Reassemble correctly (p 3-64).

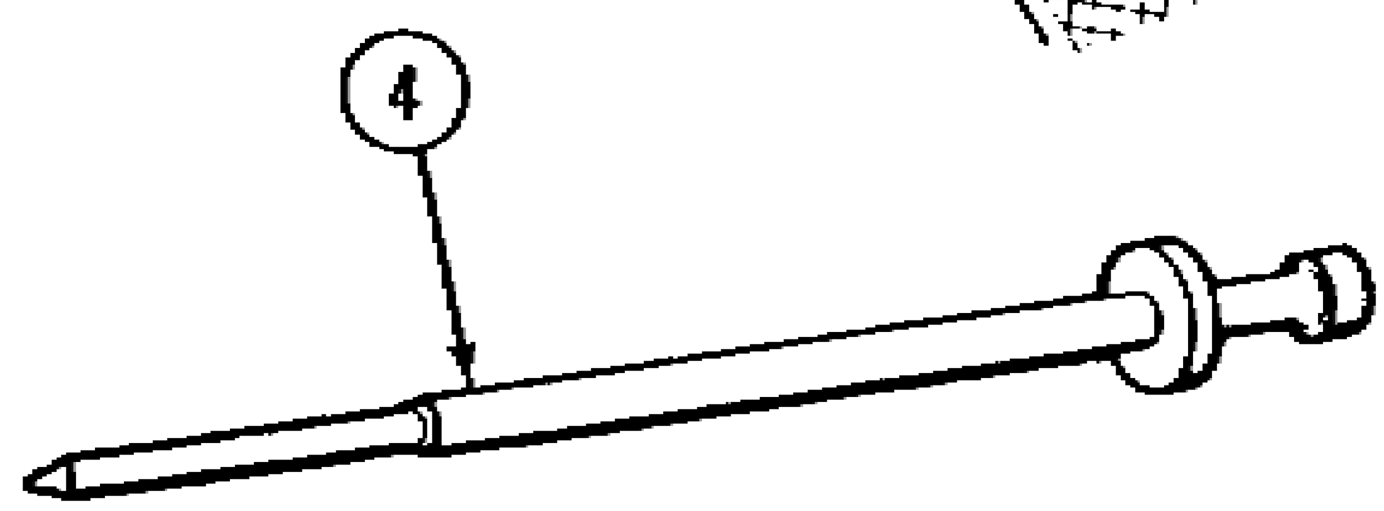
Step 4. Selector lever (3) frozen on SAFE position.

Disassemble and clean.



Step 5. Broken firing pin (4) or firing pin does not meet gage protrusion requirement.

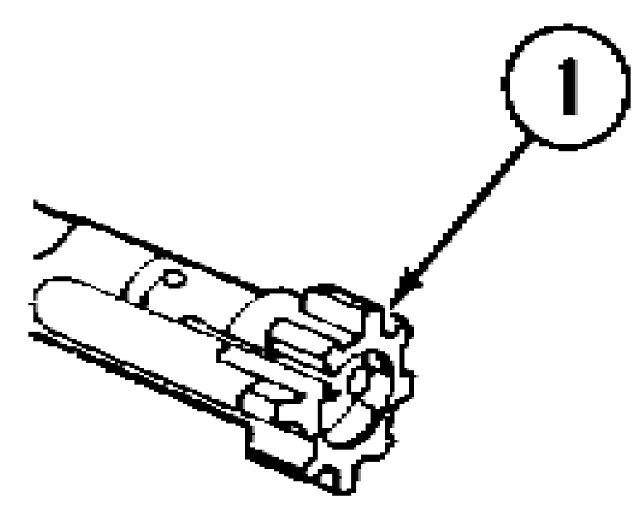
Replace.



2. FAILURE TO UNLOCK.

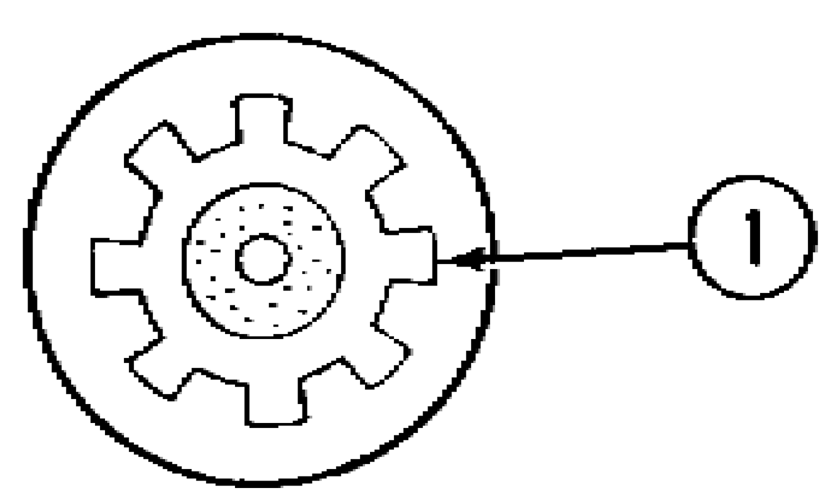
Step 1. Burred locking lugs (1) on bolt assembly.

Remove burrs.



Step 2. Burred locking lugs (1) on barrel extension.

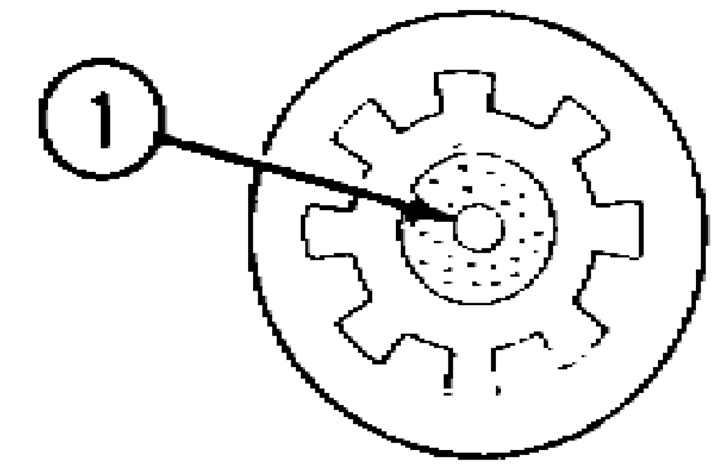
Remove burrs.



Step 3. See short recoil.

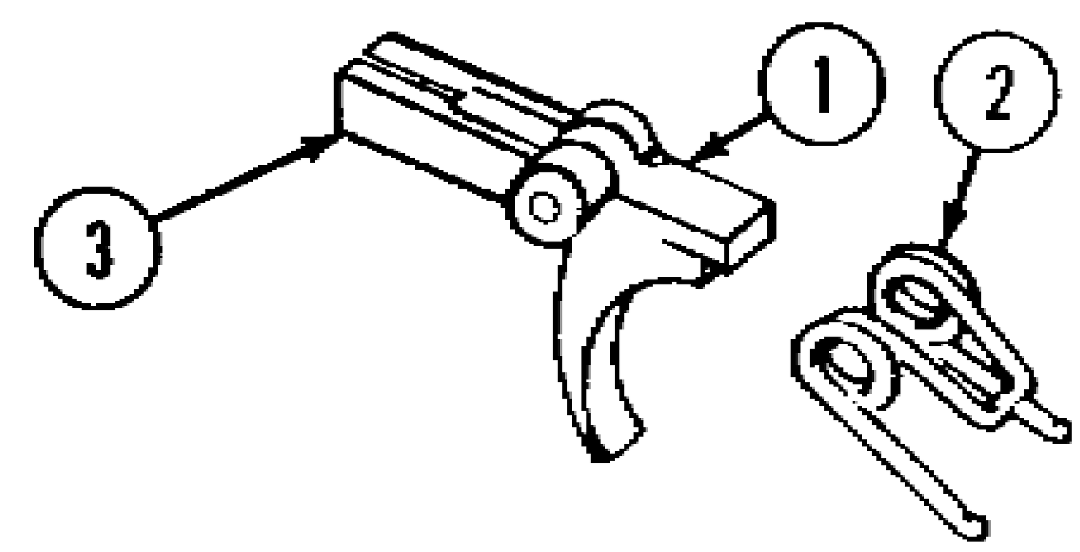
MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

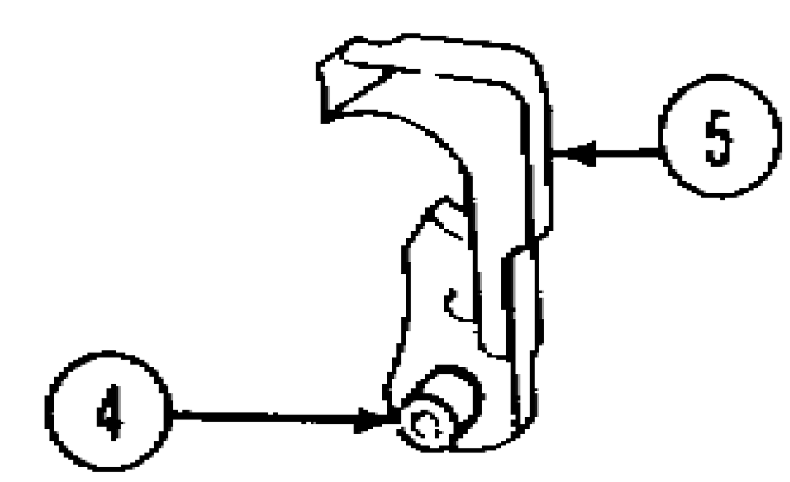
3. FAILURE TO EXTRACT.
Badly pitted chamber (1).
Replace rifle barrel assembly.



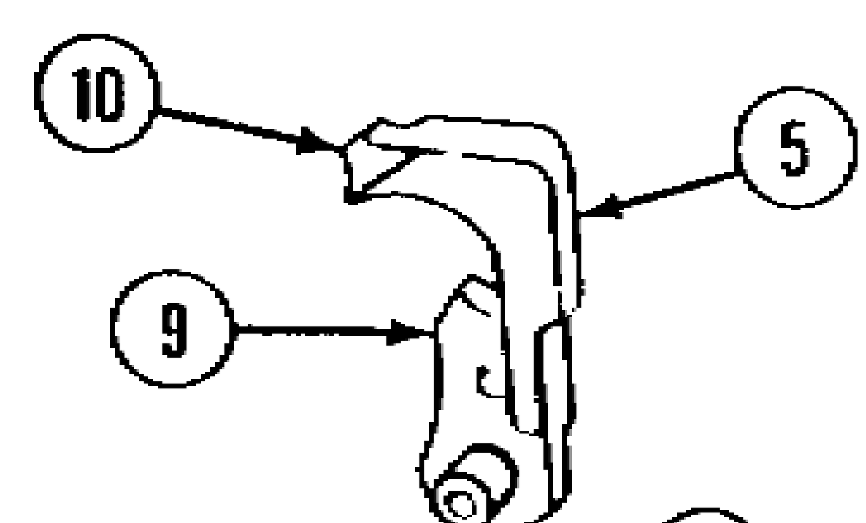
4. FAILURE TO EJECT.
See short recoil.

5. FAILURE TO COCK.
Step 1. Worn or broken trigger nose (1) or trigger spring (2).
Replace trigger (3) or defective trigger spring (2).



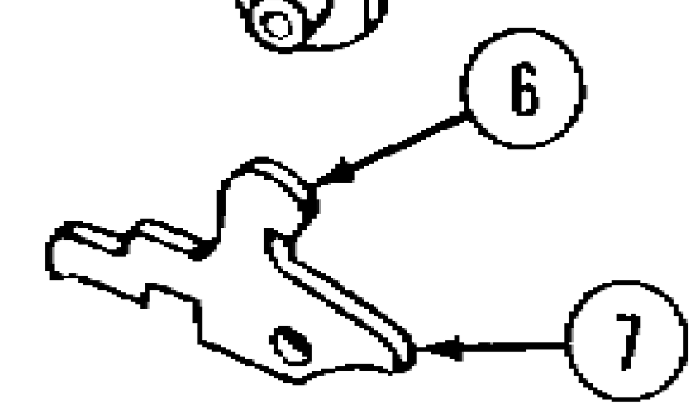


Step 2. Worn or broken hammer trigger notch (4).
Replace hammer (5).

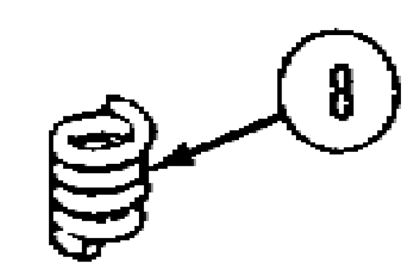


Step 3. Worn or broken hammer disconnector hook (9).
Replace hammer (5).

Step 4. Worn or broken hammer automatic sear hook (10).
Replace hammer (5).

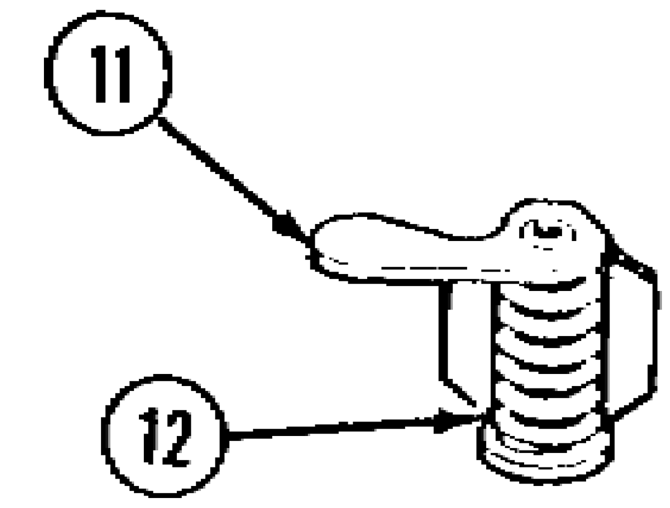


Step 5. Worn or broken disconnector hook (6).
Replace disconnector (7).



Step 6. Weak, broken, or missing disconnector spring (8).
Replace spring (8).

Step 7. Worn, broken, or missing automatic sear (11).
Replace automatic sear (11).



Step 8. Weak or broken automatic sear spring (12).
Replace automatic sear (11).

Step 9. Automatic sear spring (12) incorrectly assembled in receiver.
Remove sear (11) and install correctly (p 3-60).

TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

6. FAILURE OF MAGAZINE TO LOCK IN WEAPON.

Step 1. Dirty or corroded magazine catch (1).

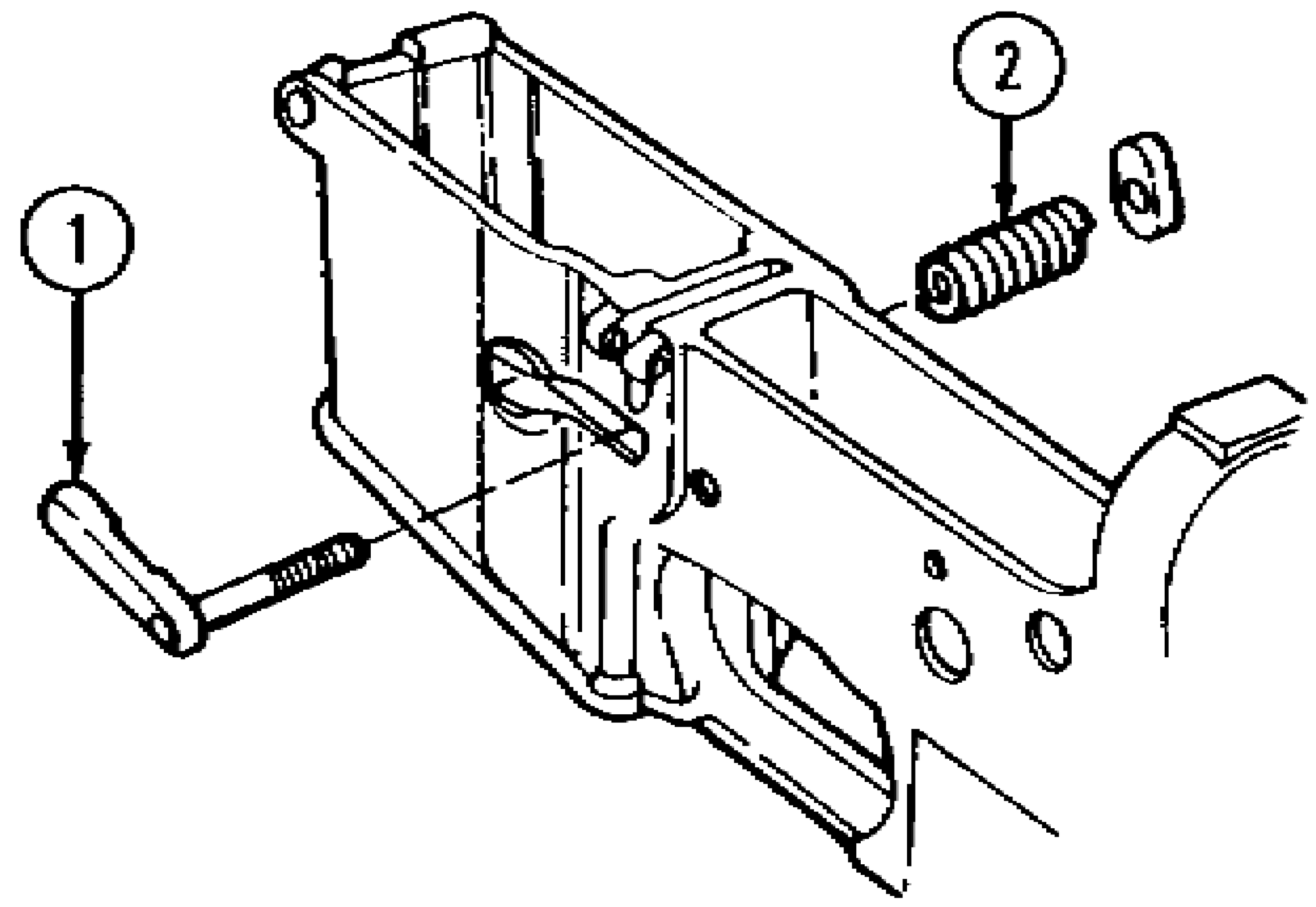
Disassemble and clean.

Step 2. Defective magazine catch spring (2).

Replace spring (2).

Step 3. Worn or broken magazine catch (1).

Replace magazine catch (1).



7. FAILURE TO FEED.

Step 1. Magazine catch spring (1) weak or broken.

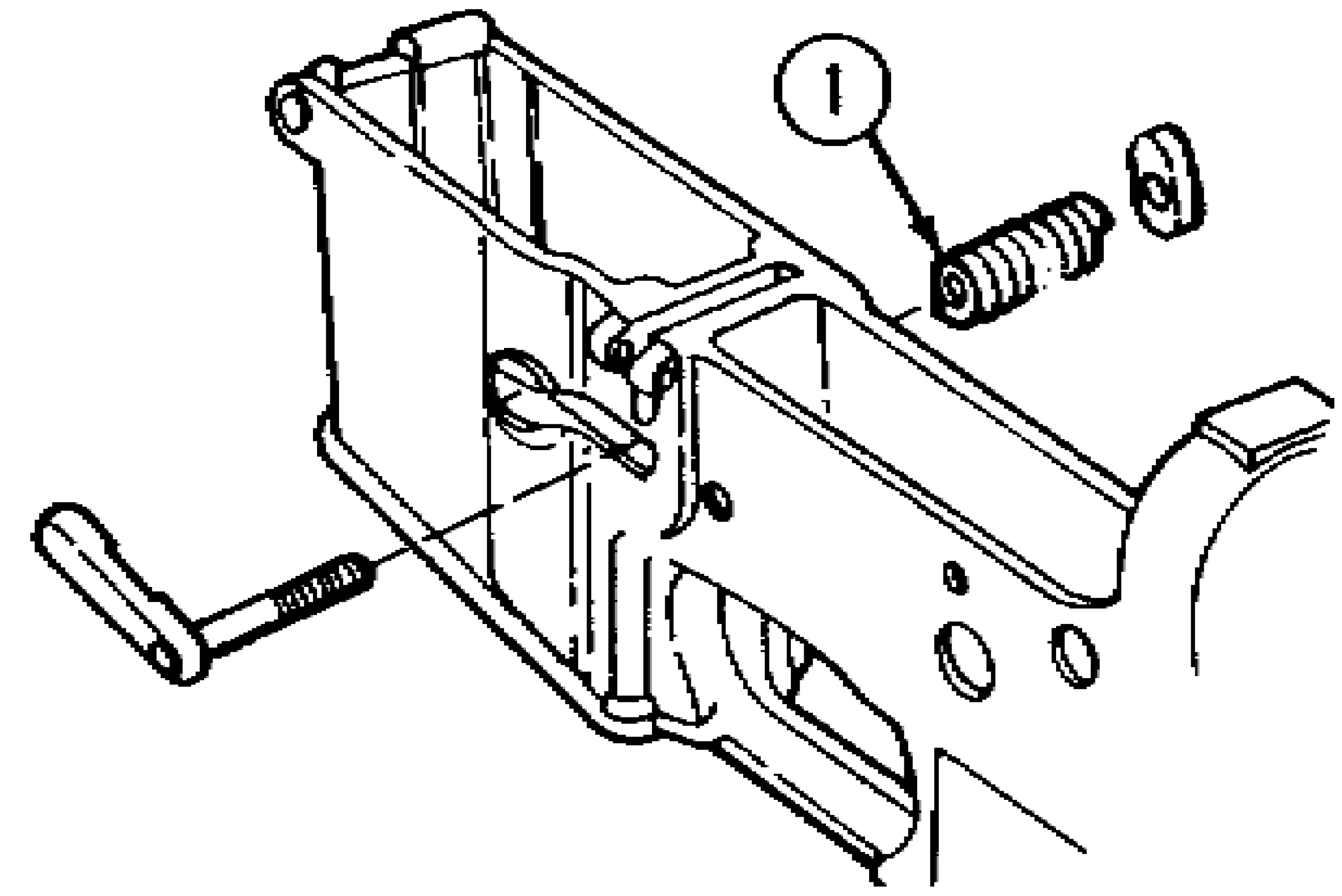
Replace magazine catch spring (1).

Step 2. Short recoil.

Refer to page 3-7.

8. FAILURE TO CHAMBER.

See short recoil.



NOTE

See new carrier key tool (E-4, app E) and procedures for its use on page 3-21.

9. FAILURE TO LOCK.

Step 1. Damaged bolt carrier key (1).

Repair or replace bolt carrier key (1) and check alinement.

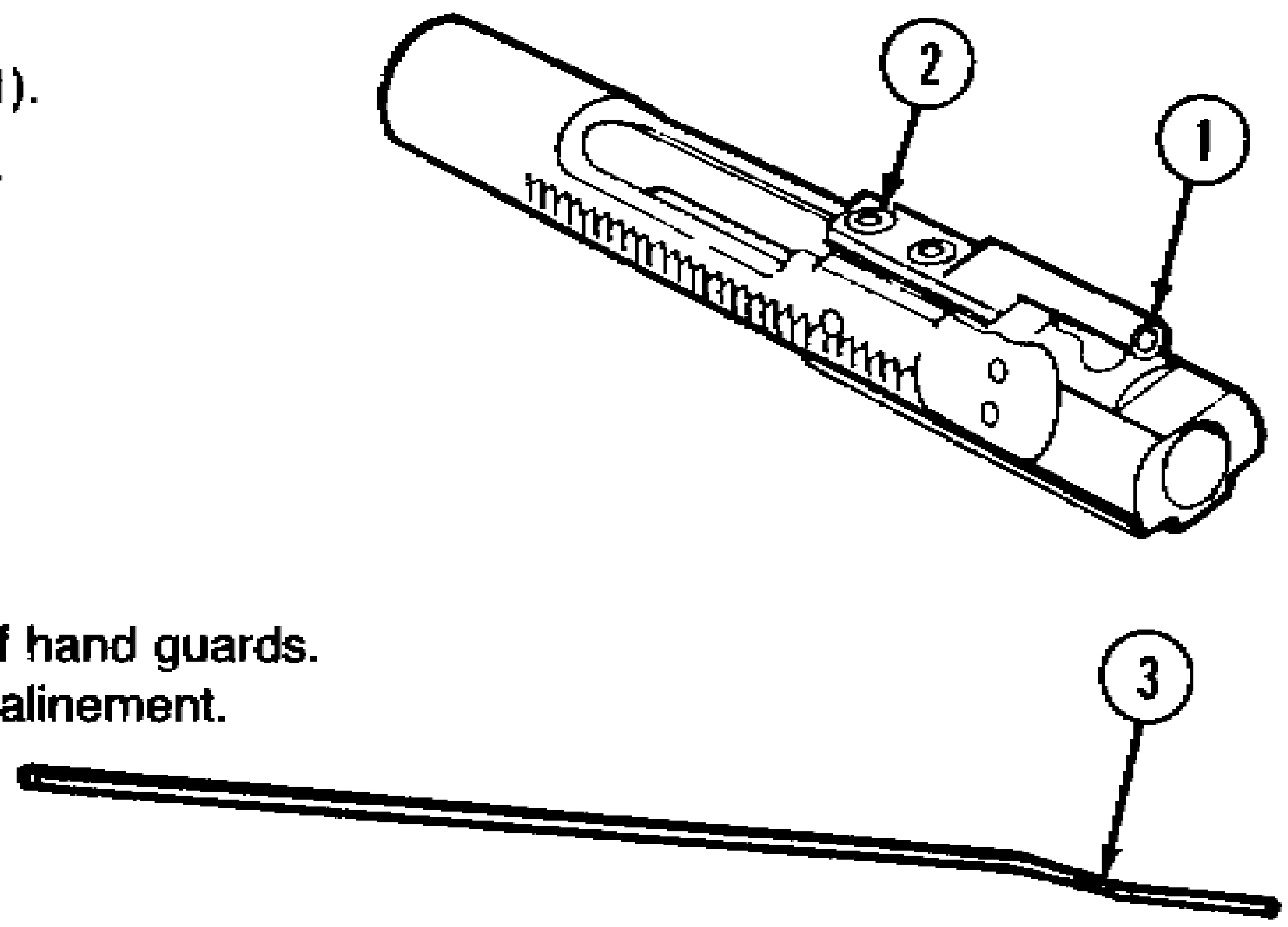
Step 2. Loose screws (2) on bolt carrier key (1).

Disassemble and repair (p 3-19).
Reassemble using new screws.

Step 3. Bent gas tube (3).

Adjust by bending tube in area of hand guards.
Replace gas tube (3) and check alinement.

Step 4. See short recoil.

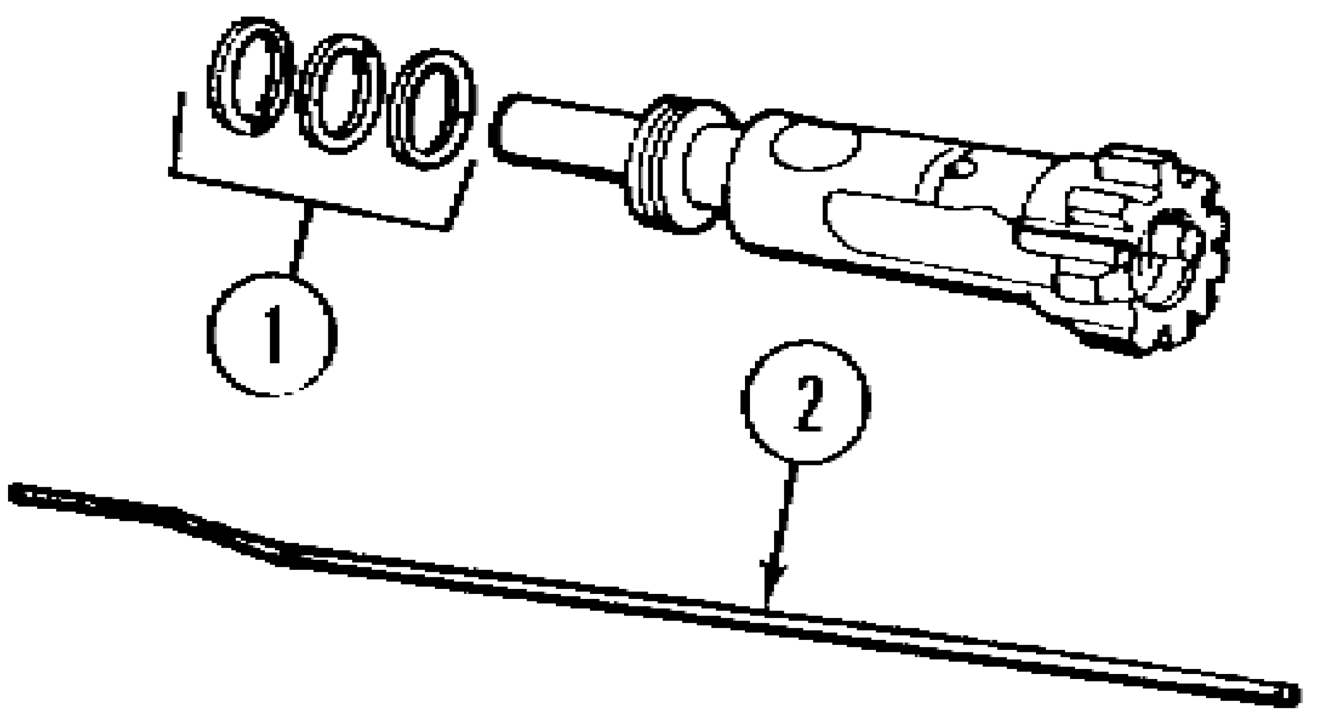


MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

10. SHORT RECOIL.

Step 1. Improper gap space or worn, missing, or broken bolt rings (1).

Replace bolt rings and stagger gaps.

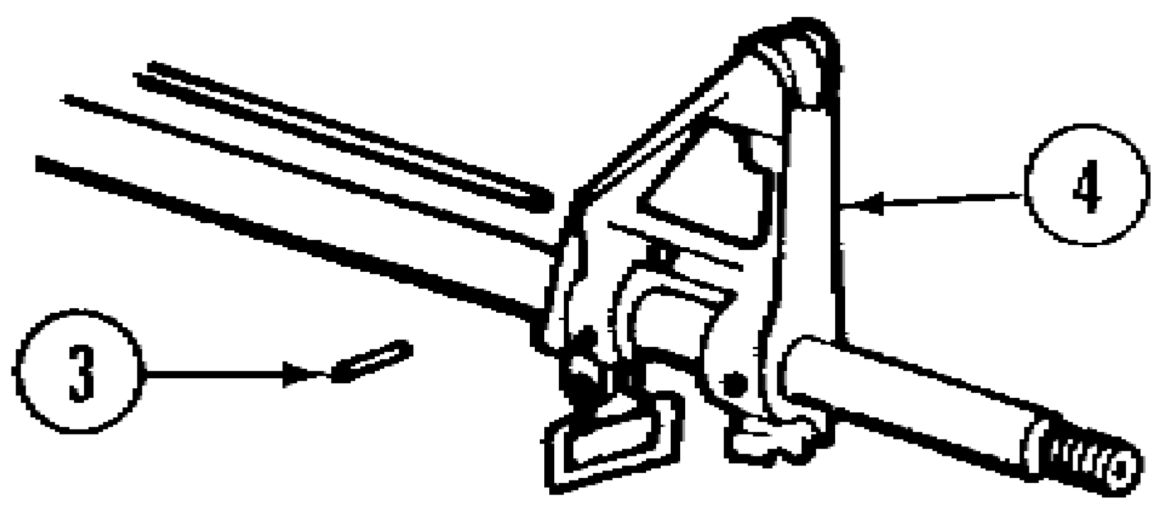


Step 2. Broken or bent gas tube (2).

Adjust by bending in area of hand guards or replace gas tube.

Step 3. Gas tube spring pin (3) missing from front sight (4).

Replace spring pin (3).

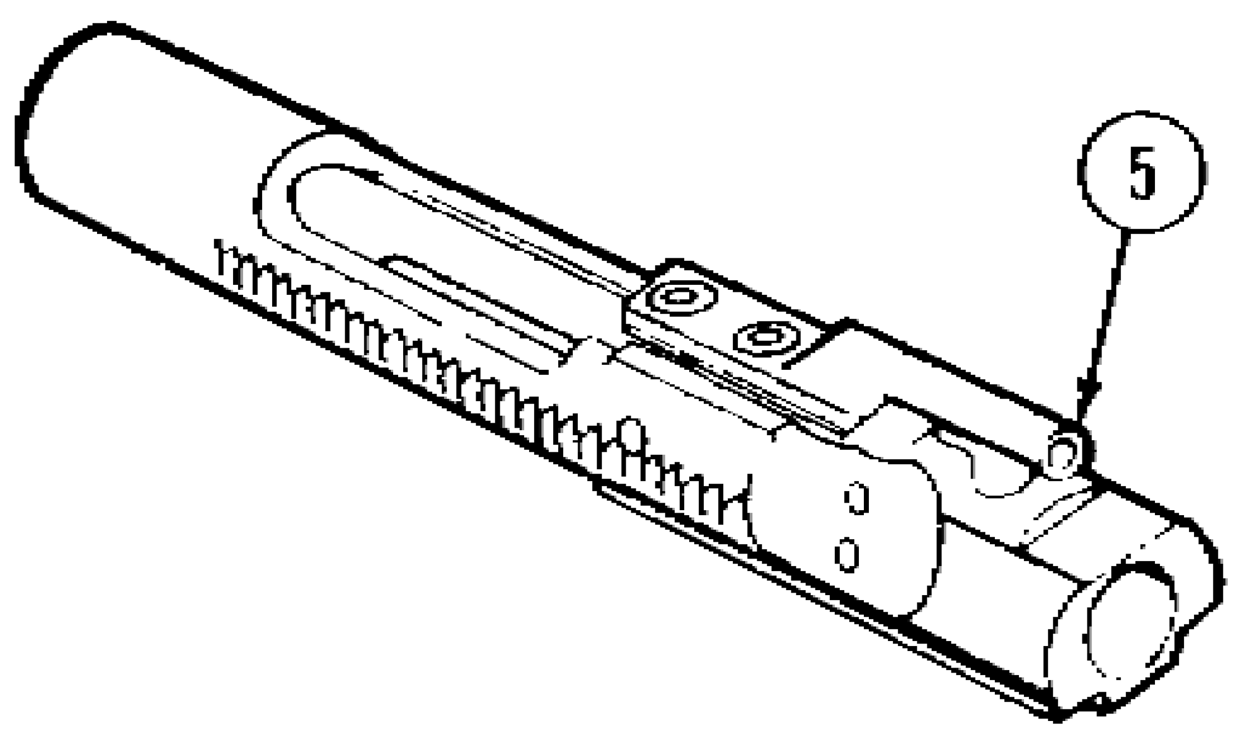


Step 4. Partially plugged gas system because of carbon build up in the gas tube (2).

Replace gas tube (2).

Step 5. Carbon buildup in the narrow passage of the bolt carrier key (5).

Clean with CLP (item 5, app D).

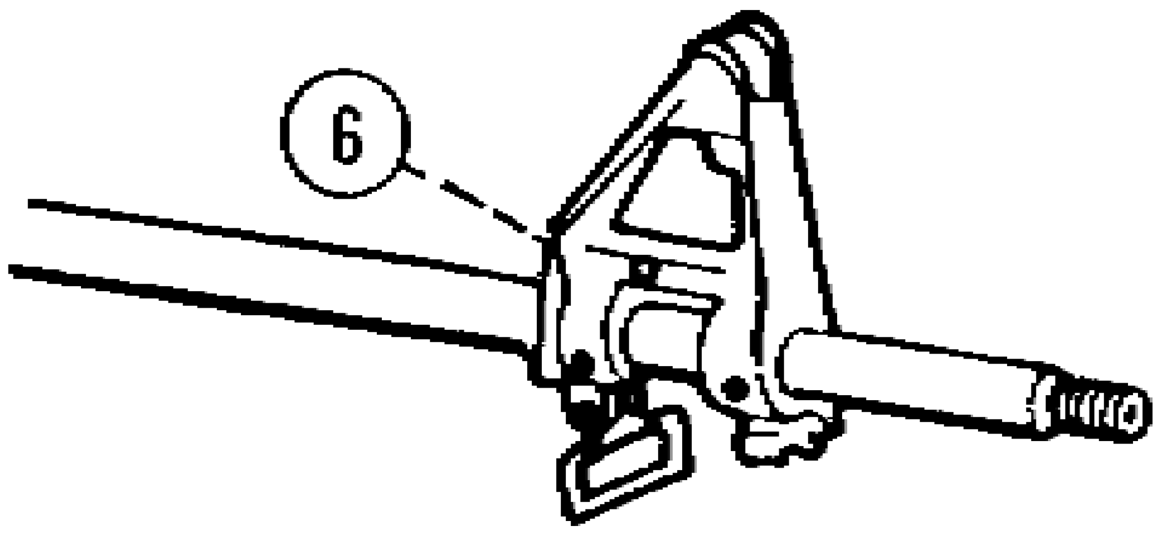


WARNING

When using P-C-111, avoid skin contact. If it comes in contact with the skin, wash off thoroughly with running water. Using a good lanolin base cream after exposure is helpful. Using rubber gloves is recommended.

Step 6. Carbon buildup in barrel gas port (6).

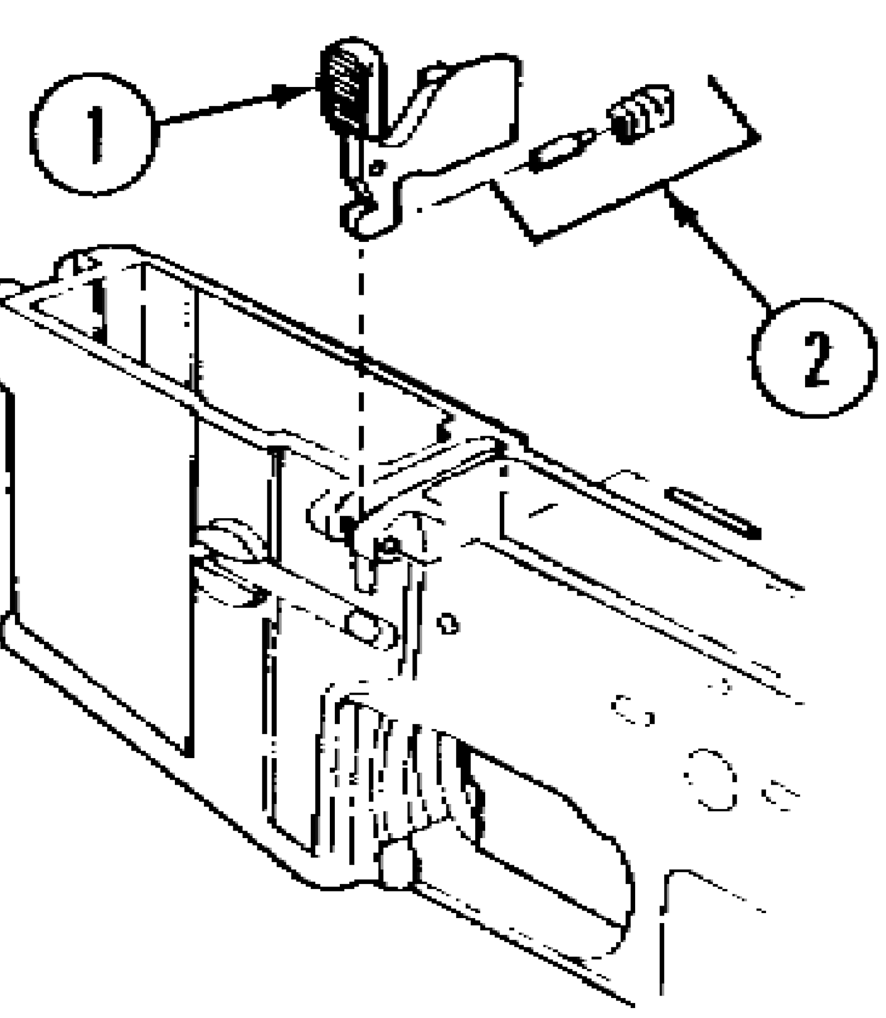
Remove carbon buildup by soaking in P-C-111 (item 4, app D). Wear rubber gloves (item 10A, app D).



11. BOLT FAILS TO LOCK TO REAR AFTER FIRING LAST ROUND.

Step 1. Broken bolt catch (1).

Replace bolt catch (1).



Step 2. Weak or broken bolt catch spring (2).

Replace bolt catch spring (2).

Step 3. Restricted movement of bolt catch (1).

Disassemble and clean.

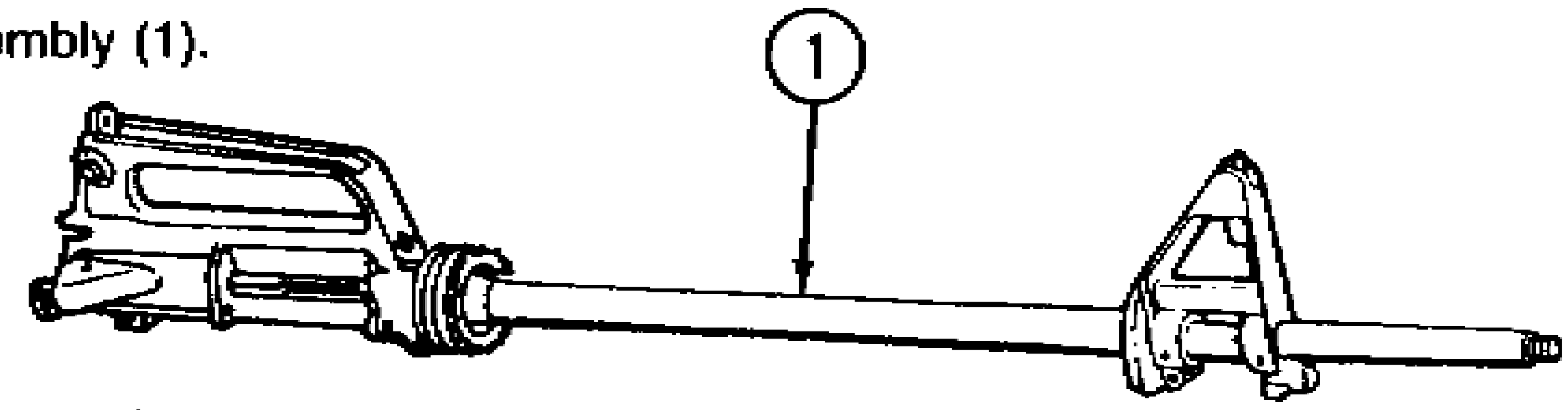
TROUBLESHOOTING (CONT)

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

12. WEAPON CANNOT BE ZEROED.

Step 1. Defective rifle barrel assembly (1).

Replace rifle barrel assembly (1).

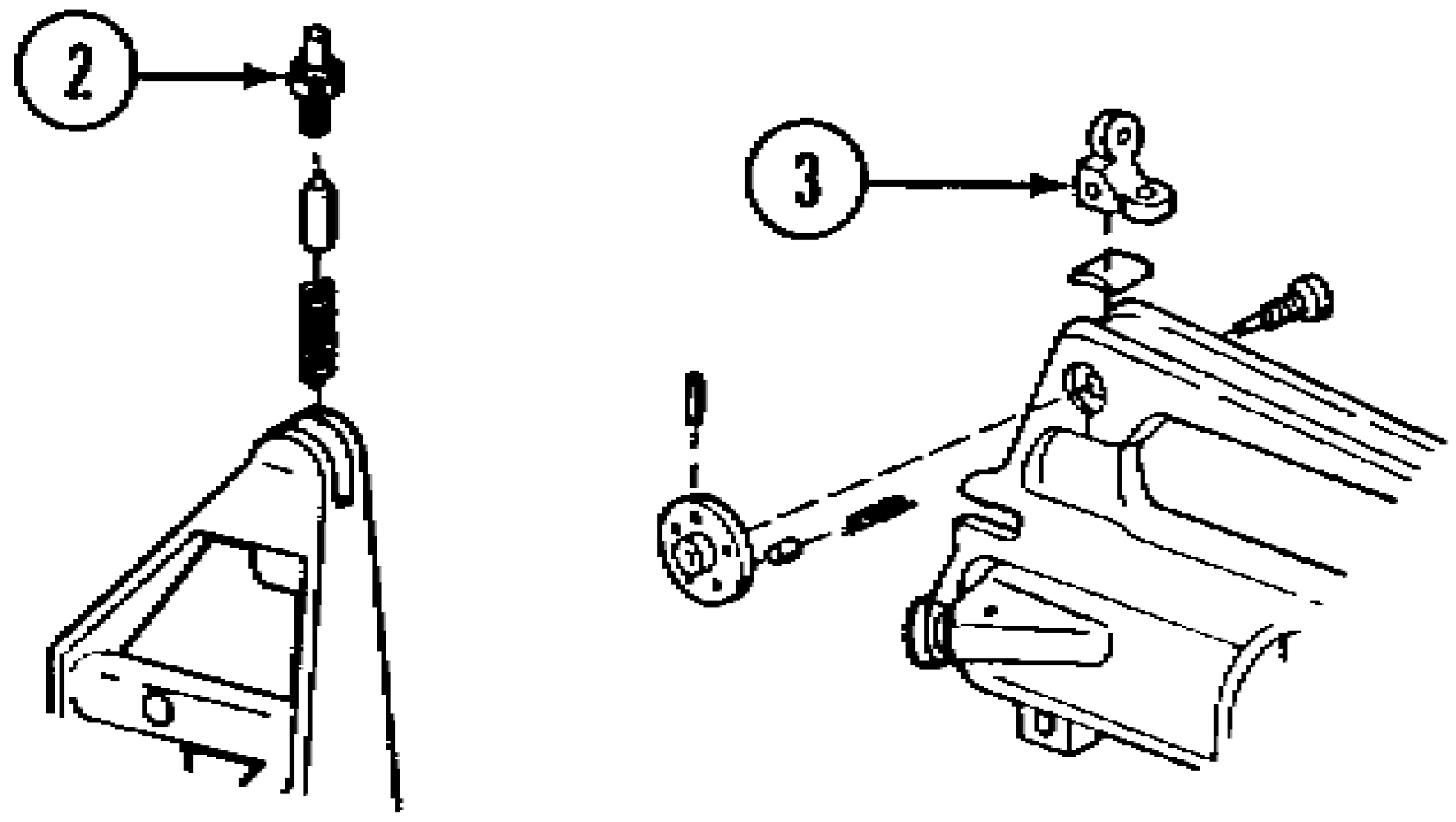


Step 2. Barrel assembly out of alinement with rear sight on upper receiver.

Aline barrel and upper receiver (p 3-36).

Step 3. Corroded front (2) or rear (3) sights.

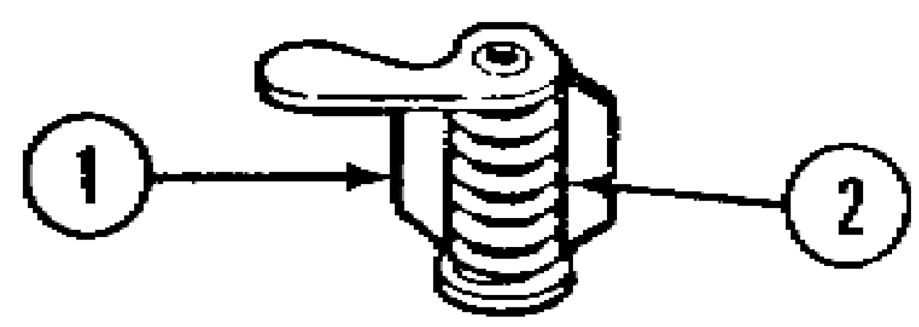
Disassemble, clean, and lubricate.



13. FAILURE TO CYCLE WITH SELECTOR LEVER SET AT AUTO.

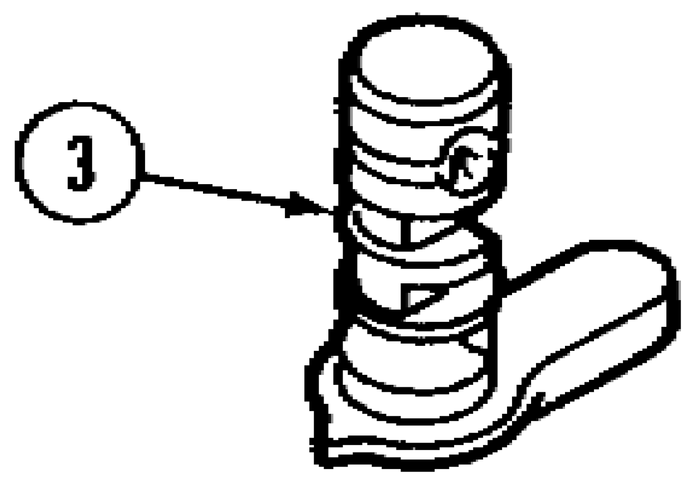
Step 1. Broken automatic sear (1) or spring (2).

Replace automatic sear (1).



Step 2. Faulty selector lever (3).

Replace selector lever (3).



Step 3. Short recoil.

See malfunction 10.

14. FIRES WITH SELECTOR LEVER ON SAFE OR WHEN TRIGGER IS RELEASED WITH SELECTOR LEVER ON SEMI.

Step 1. Worn or broken hammer trigger nose (1).

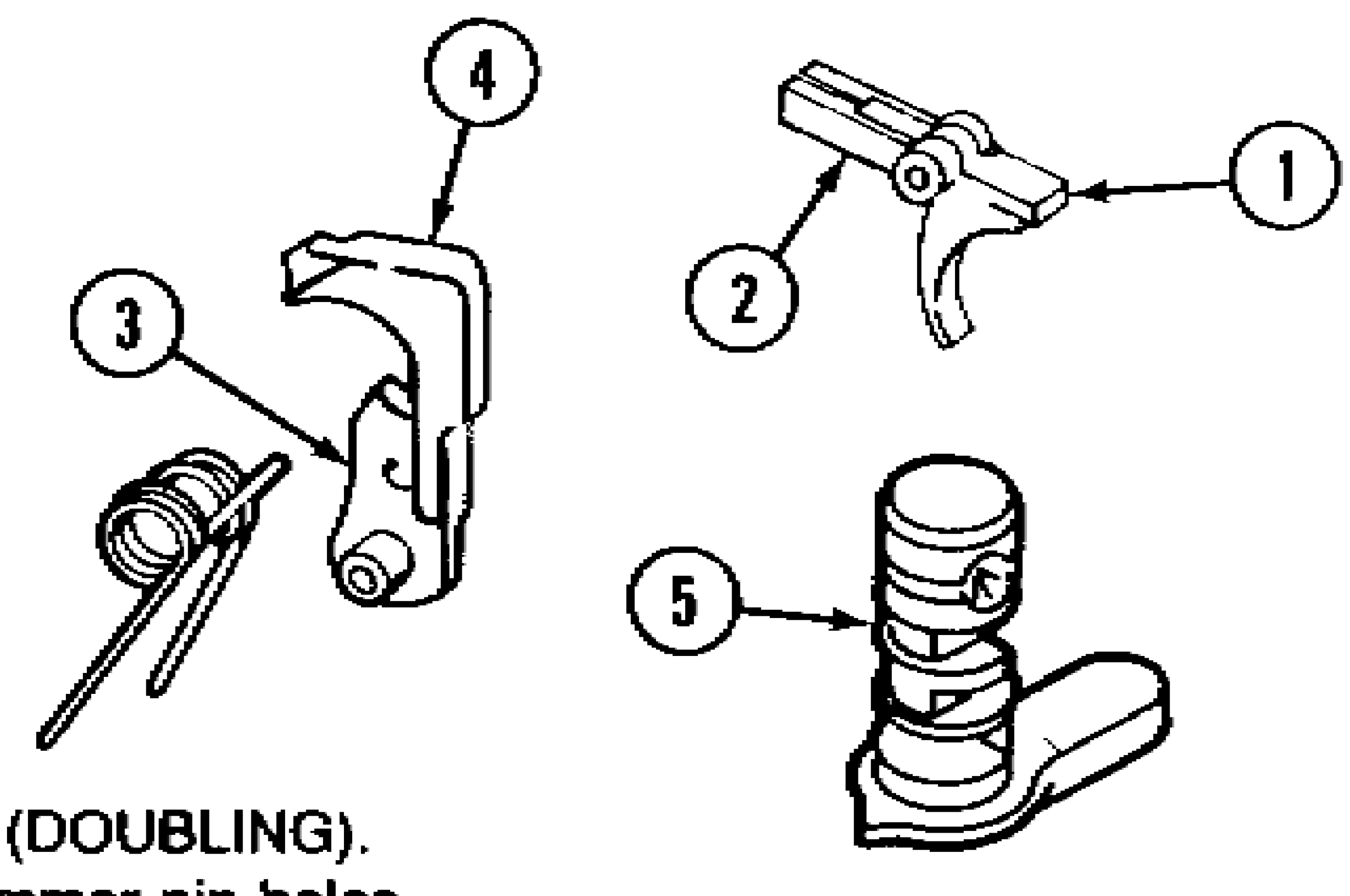
Replace trigger (2).

Step 2. Worn or broken hammer trigger notch (3).

Replace firing hammer (4).

Step 3. Defective selector.

Replace selector (5).



15. FIRES TWO ROUNDS IN SEMI SELECTOR POSITION (DOUBLING).

Worn trigger or hammer pin hole. Gage trigger and hammer pin holes.

If gage 12006472 enters any of the four holes, replace weapon (p 3-59).

Section IV. DECONTAMINATION OF RIFLES AND SHOP AREA

3-8. DECONTAMINATION OF SIGHTS ACTIVATED WITH TRITIUM (H 3). Refer to Chapter 2 for procedures.

Section V. MAINTENANCE PROCEDURES FOR THE M16 and M16A1 RIFLE

3-9. MAJOR COMPONENTS OF M16 AND M16A1 RIFLE.

This task covers disassembly.

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)

M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8426685 (19204)

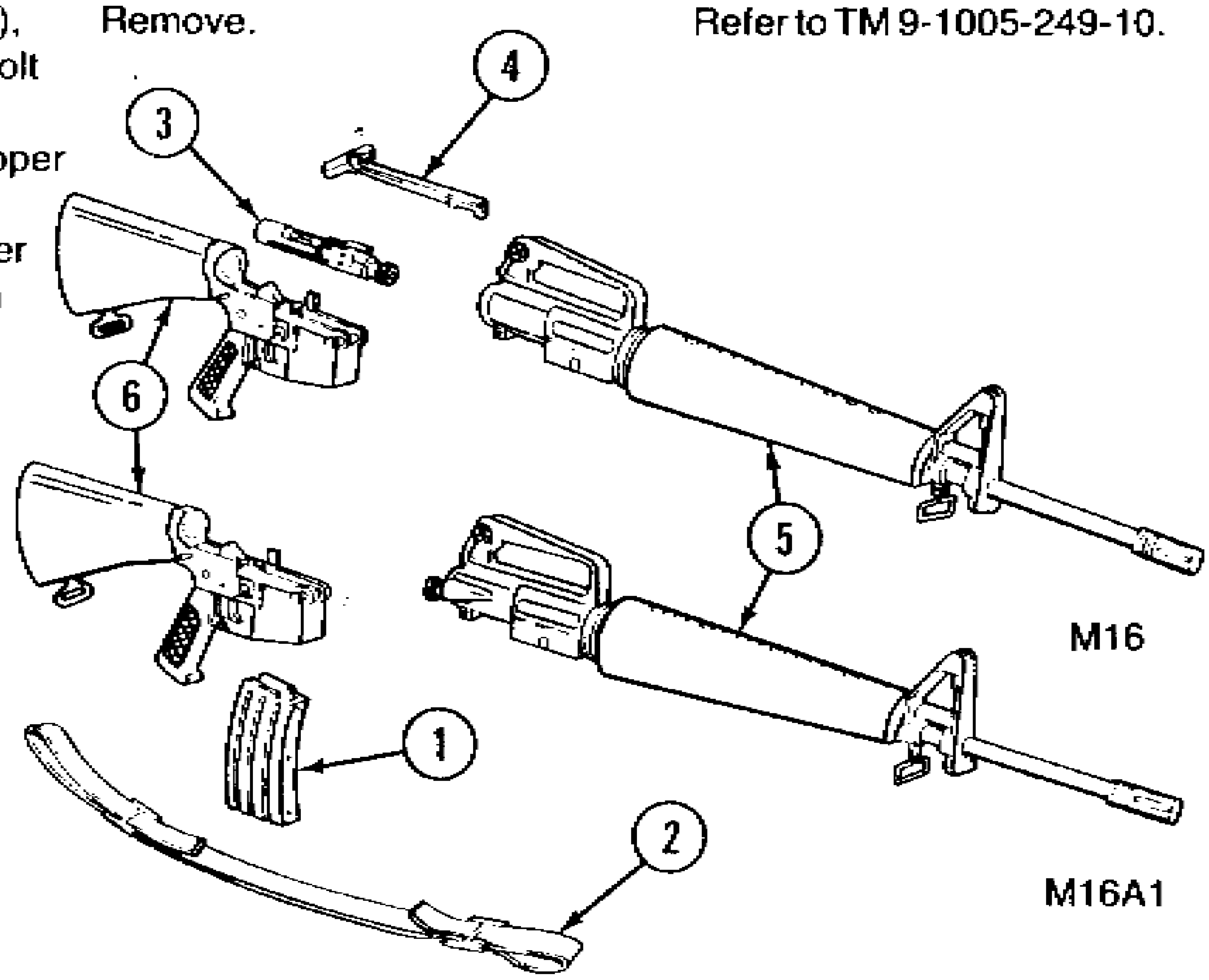
References
TM 9-1005-249-10

Equipment Condition
Weapon assembled

General Safety Instructions
Before starting an inspection, be sure to clear the weapon. Do not actuate the trigger until the rifle has been cleared. Inspect the chamber to ensure that it is empty and no ammunition is in position to be chambered. Do not keep live ammunition near work area.

Before starting an inspection on a weapon equipped with a low light level sight, check for damage to the low light level sight. See procedures listed on page 2-14.

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Weapon	Cartridge magazine (1), small arms sling (2), bolt carrier assembly (3), charging handle (4), upper receiver and barrel assembly (5), and lower receiver and extension assembly (6)	Remove.	Refer to TM 9-1005-249-10.



3-10. BOLT CARRIER ASSEMBLY.

This task covers:

a. Disassembly
b. Cleaning
c. Inspection/Repair
d. Test
e. Reassembly

INITIAL SETUP

Tools

Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)

M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8426685 (19204)

Materials/Parts

Cleaner, lubricant and preservative (CLP) (item 5, app D)
Cleaner, tobacco pipe (item 5A, app D)
Wiping rag (item 15, app D)

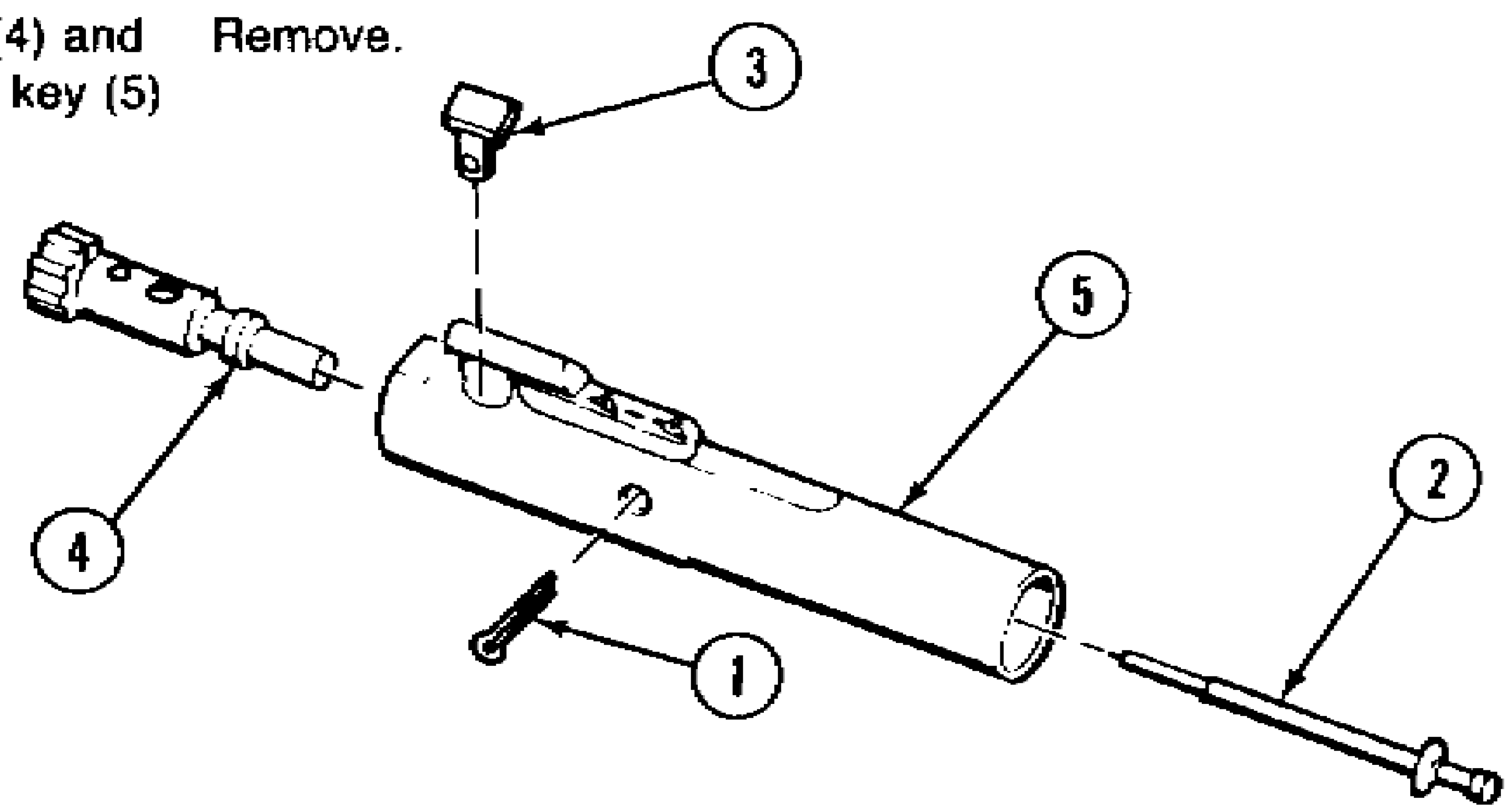
Equipment Conditon

Page	Condition Description
3-10	Bolt carrier assembly removed

LOCATION	ITEM	ACTION	REMARKS

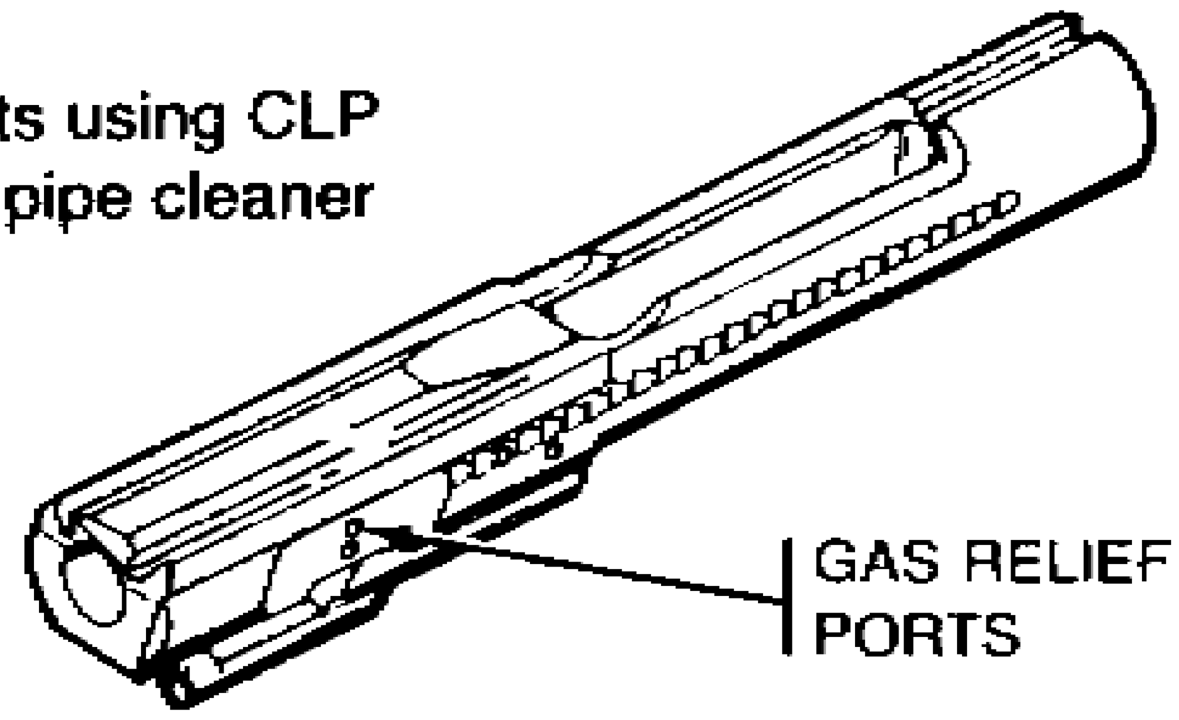
DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Bolt Carrier Assembly	a. Firing pin retaining pin (1)	Remove.	
	b. Firing pin (2)	Remove.	Tip bolt carrier and key allowing firing pin to drop out. Catch the firing pin.
	c. Bolt cam pin (3)	Remove.	Rotate bolt cam pin 1/4 turn and lift straight up.
	d. Bolt assembly (4) and bolt carrier and key (5)	Remove.	

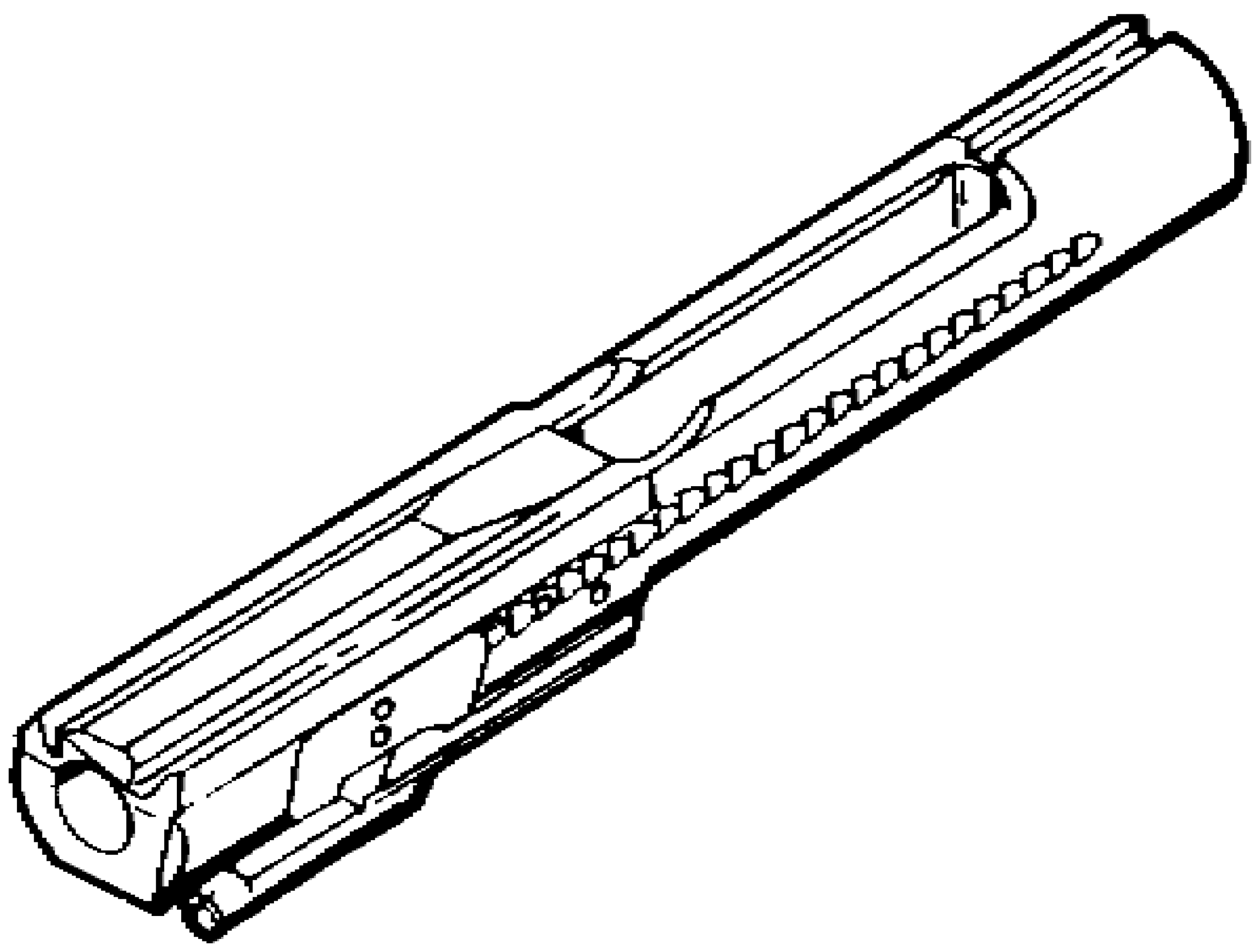


3-10. BOLT CARRIER ASSEMBLY (CONT).

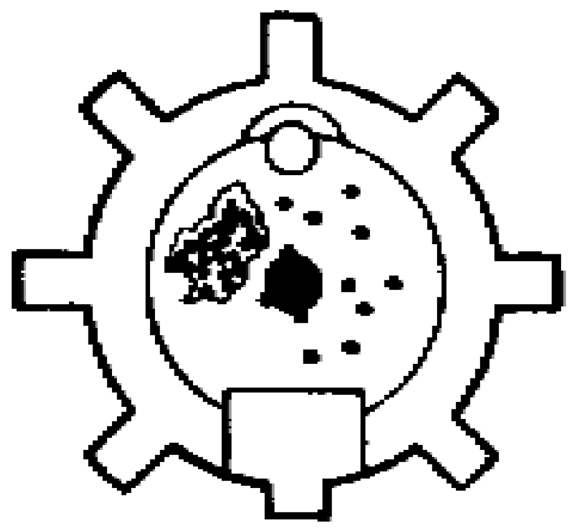
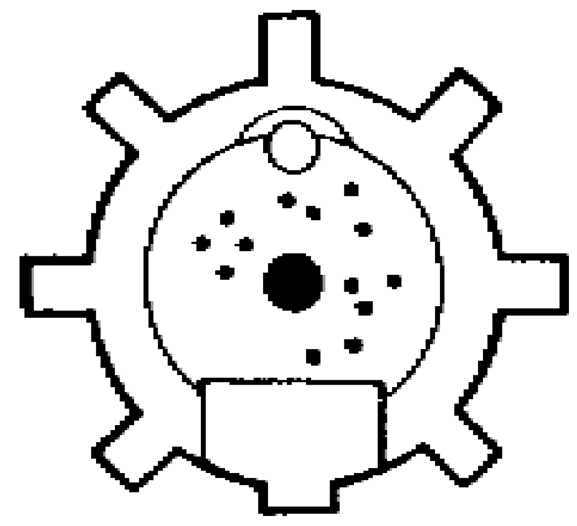
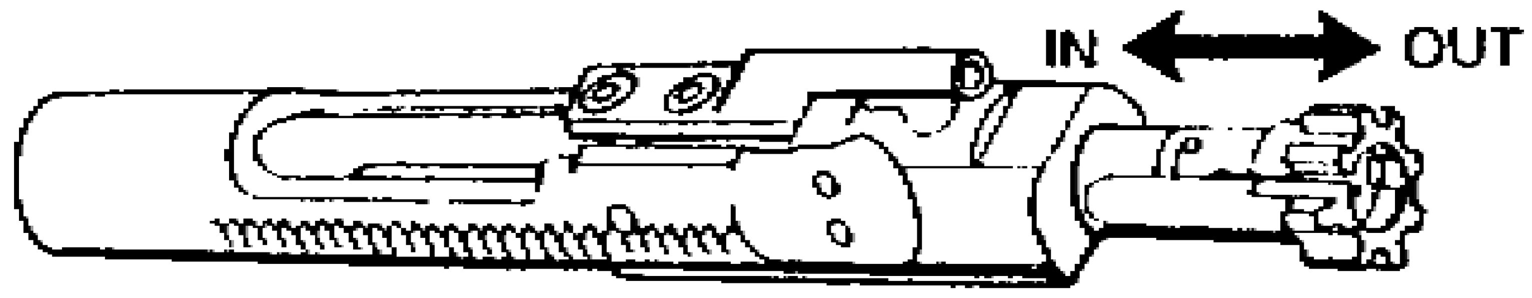
LOCATION	ITEM	ACTION	REMARKS
CLEANING			
Bolt Carrier Assembly	Bolt carrier and key	Clean gas relief ports using CLP (item 5, app D) and pipe cleaner (item 5A, app D).	

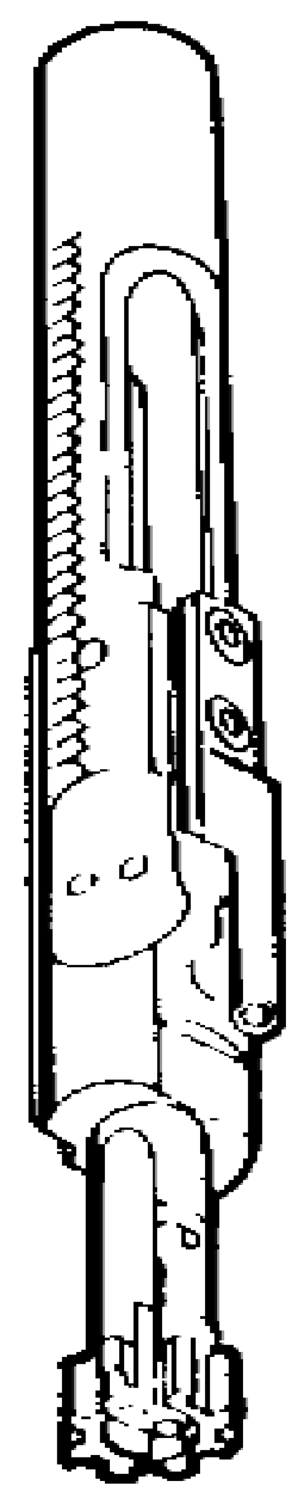


LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
Bolt Carrier Assembly	a. Bolt carrier and key	Check carrier and key screws for tightness and for proper staking.	There are bolts and bolt carriers on fielded weapons, some with chrome-plated exterior surface finishes and some with phosphate coating. Both finishes are acceptable under certain operational requirements and/or restrictions. Phosphate-coated bolt assemblies are required for divisional combat units. Chrome-plated bolt assemblies are acceptable for divisional noncombat units and training center units. Chrome-plated and phosphate-coated bolt assemblies, bolt carrier assemblies, and repair parts for these assemblies may be intermixed in any combination, with the following exception. CHROME-PLATED BOLT CARRIERS ARE DESIGNATED FOR CONUS USE ONLY and must be replaced prior to debarkation for an overseas assignment. This is to say that Divisional Combat Units and units which fall under the definition of rapid deployment type must use phosphated-coated bolt carriers. See staking procedure on page 3-20.
	b. Firing pin	Inspect tip for proper contour. Inspect for pitting, wear, and burrs.	



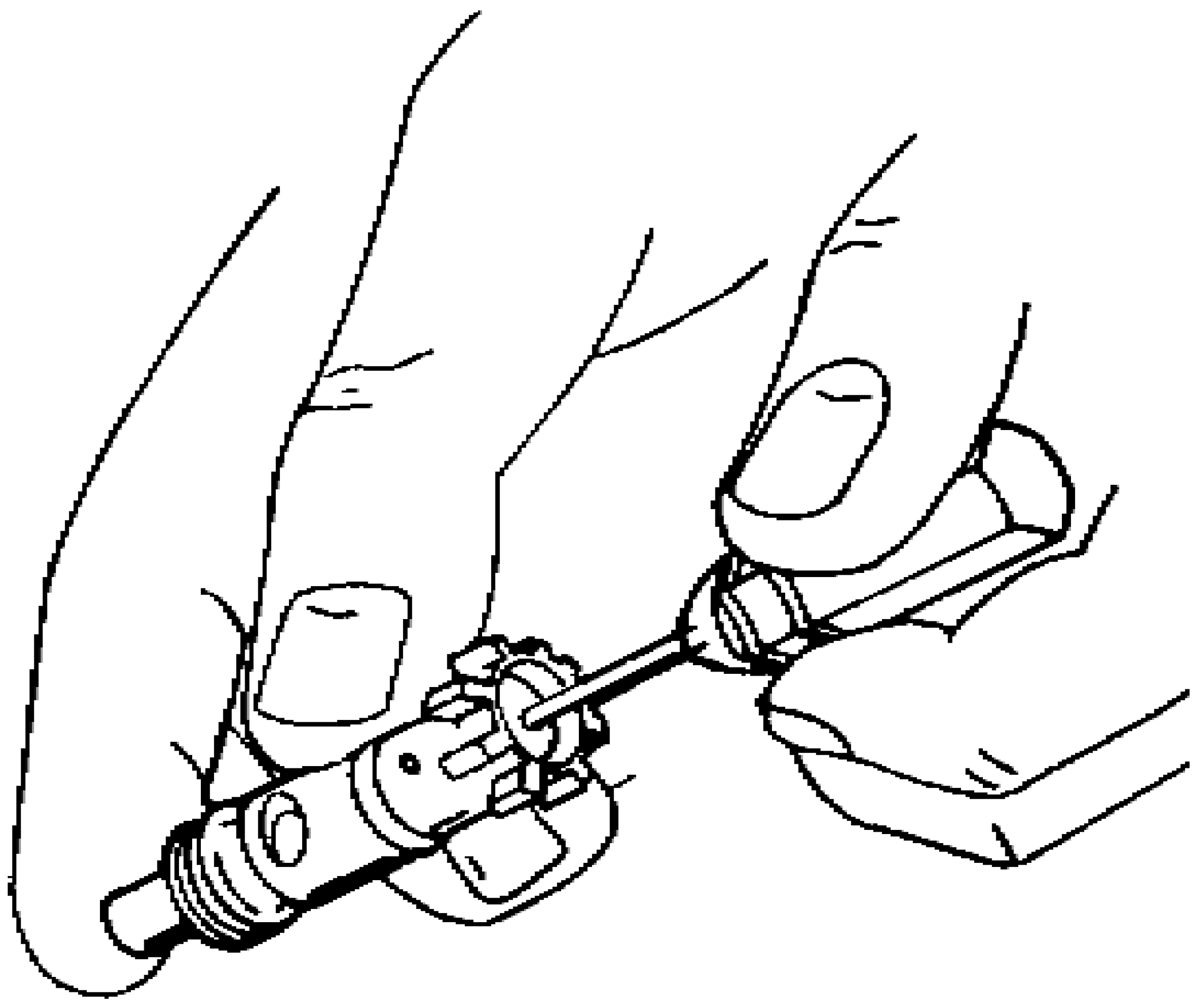


LOCATION	ITEM	ACTION	REMARKS
	c. Bolt assembly	Inspect for wear, burrs, and pits.	Replace the bolt assembly if it contains a cluster of pits approximately 1/8 inch in diameter and if the pits appear to be more than 0.010 inch deep.
			Bolts that contain minute individual pits of a scattered pattern shall not be cause for rejection.
	d. Bolt carrier assembly and bolt assembly	Exercise bolt in bolt carrier assembly.	Prior to reassembly, insert bolt assembly in bolt carrier assembly and exercise bolt in and out of bolt carrier assembly. Check for binding.
			
		Check for proper fit. Turn bolt carrier assembly and suspend so the bolt assembly is pointed down.	The bolt must not drop out. If weight of bolt assembly allows it to drop out of carrier assembly, replace bolt rings.

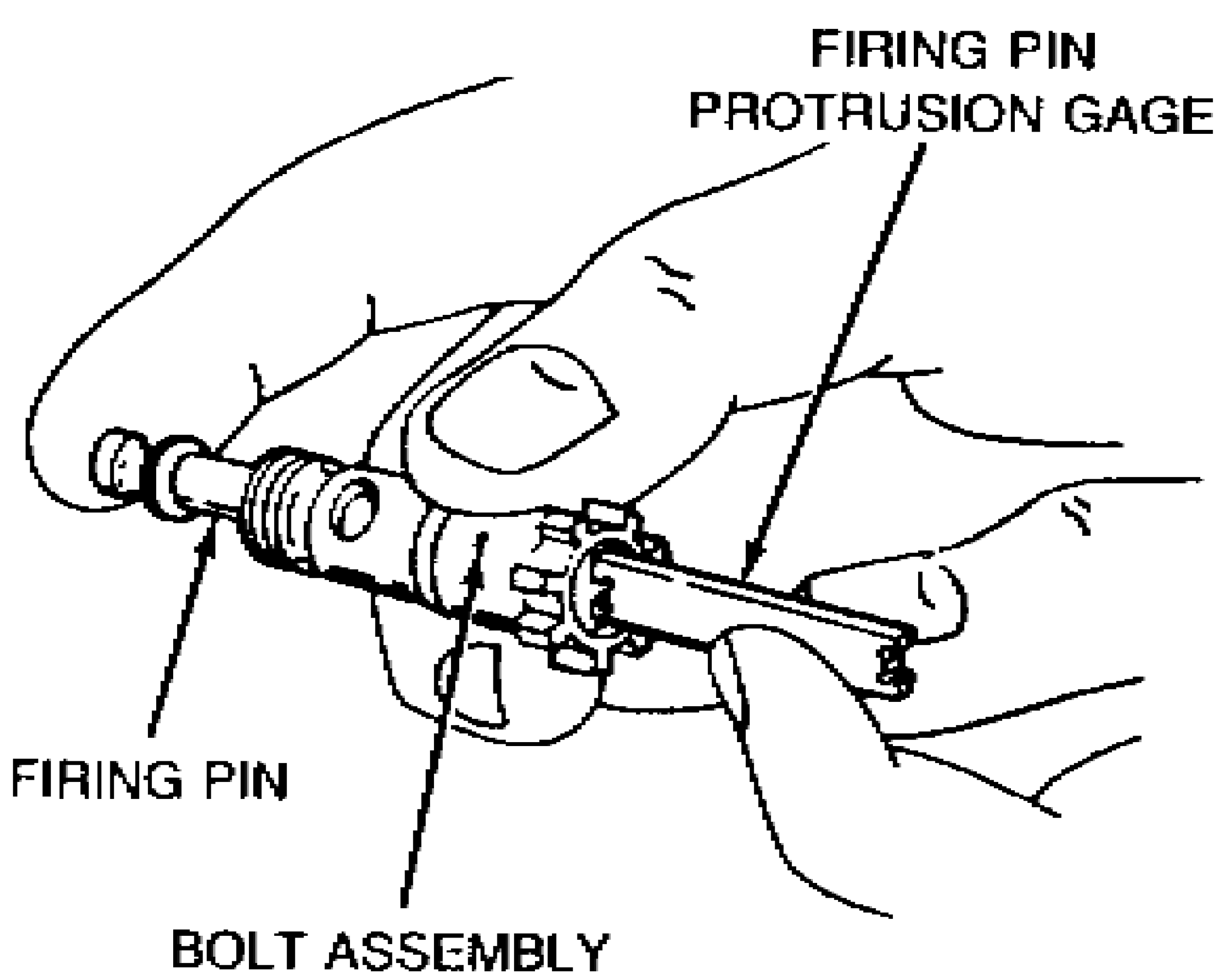


3-10. BOLT CARRIER ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
TEST			
Bolt Assembly	Bolt assembly	Test firing pin hole for elongated and oversized holes.	Bolts that have elongated or oversized holes that permit special not-go plug gage 12620101 to penetrate fully at any position on the circumference of the firing pin hole will be rejected.



LOCATION	ITEM	ACTION	REMARKS
		Replace bolt assembly if firing pin hole is enlongated or oversized.	
	Bolt assembly	Using firing pin protrusion gage 7799735, check for proper firing pin protrusion.	
		Insert firing pin through bolt assembly.	
		Firing pin should touch the gage on minimum but should not touch on maximum.	
		Replace defective firing pin.	



LOCATION	ITEM	ACTION	REMARKS
REPAIR			
Bolt Carrier Assembly	All authorized items	Replace if unserviceable.	

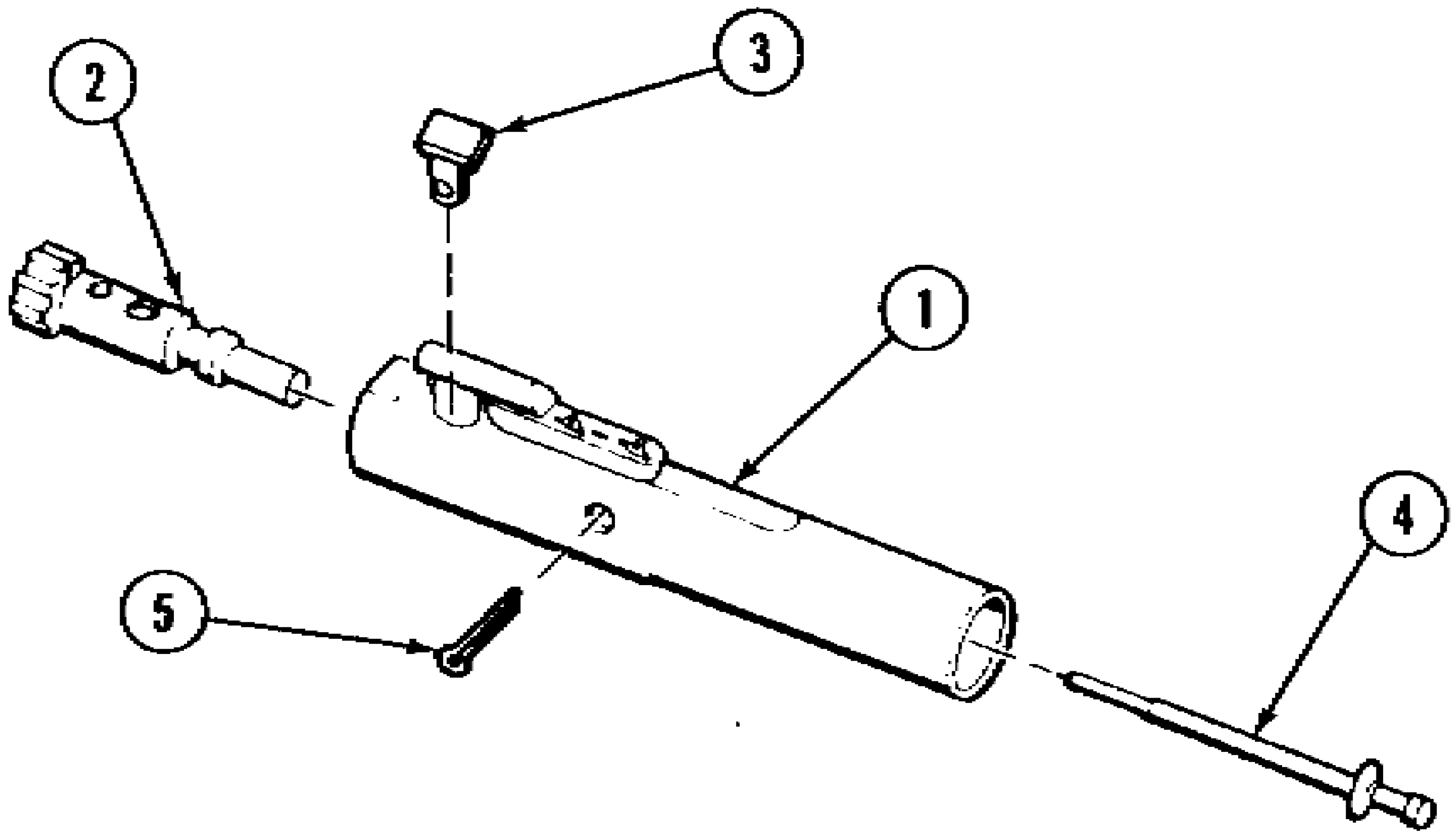
NOTE

Be sure to retest firing pin, bolt carrier and key, bolt assembly, bolt carrier assembly or bolt assembly.

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY

Bolt Carrier Assembly	a. Bolt carrier and key (1) and bolt assembly (2)	Install.	
	b. Bolt cam pin (3)	Install.	Install and rotate a quarter turn.
	c. Firing pin (4)	Install.	Hold carrier with bolt assembly down and drop in firing pin.



	d. Firing pin retaining pin (5)	Install.	Install from the left side only to ensure proper installation of firing pin retaining pin. Attempt to shake out firing pin.

3-11. BOLT ASSEMBLY.

This task covers:
  a. Disassembly
  b. Inspection/Repair
  c. Reassembly

INITIAL SETUP

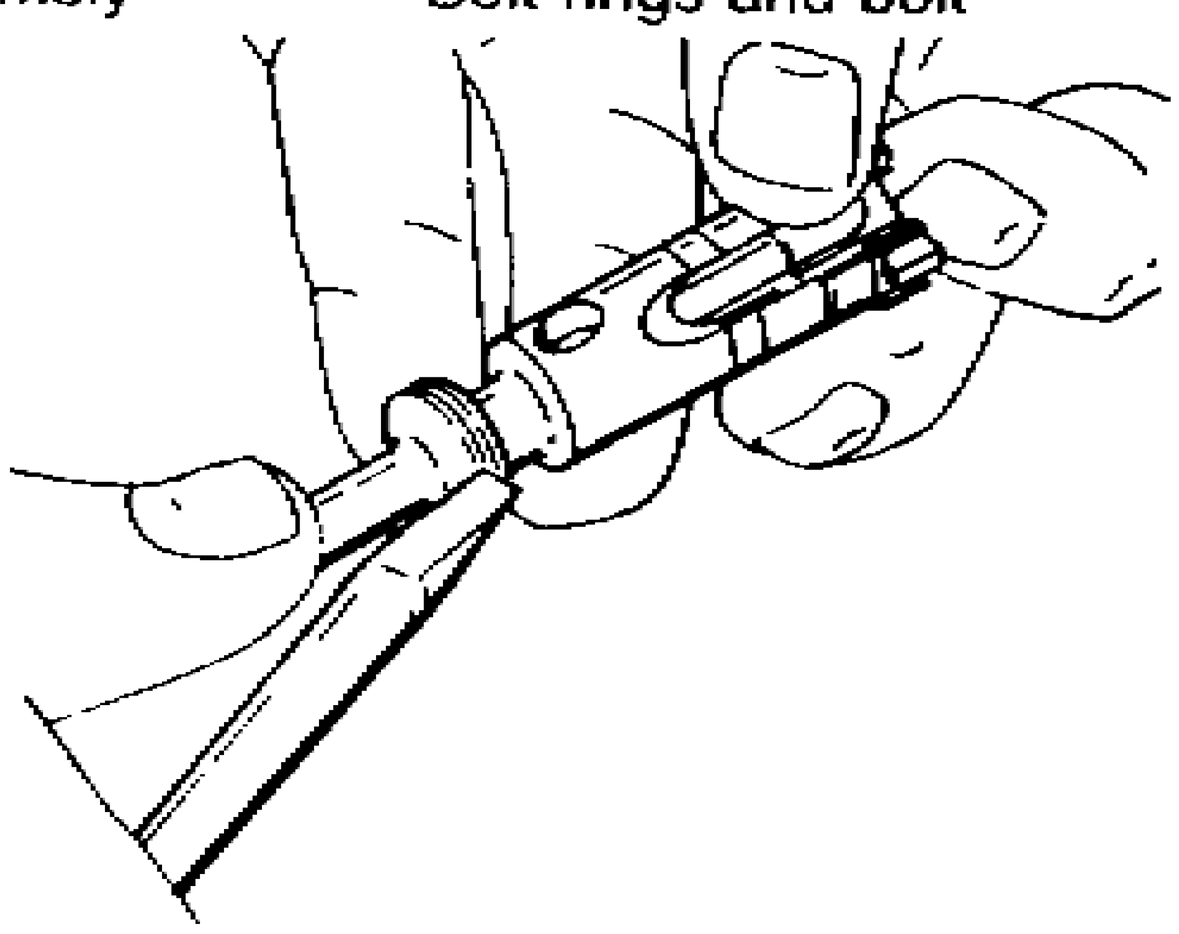
Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)
M16 Series and M231 Firing Port Weapon
Direct Support and General Support
Maintenance for 5.56-mm Rifle Tool and
Gage Set 8426685 (19204)

Materials/Parts
Penetrant kit (item 14, app D)
Wiping rag (item 15, app D)

Equipment Conditions

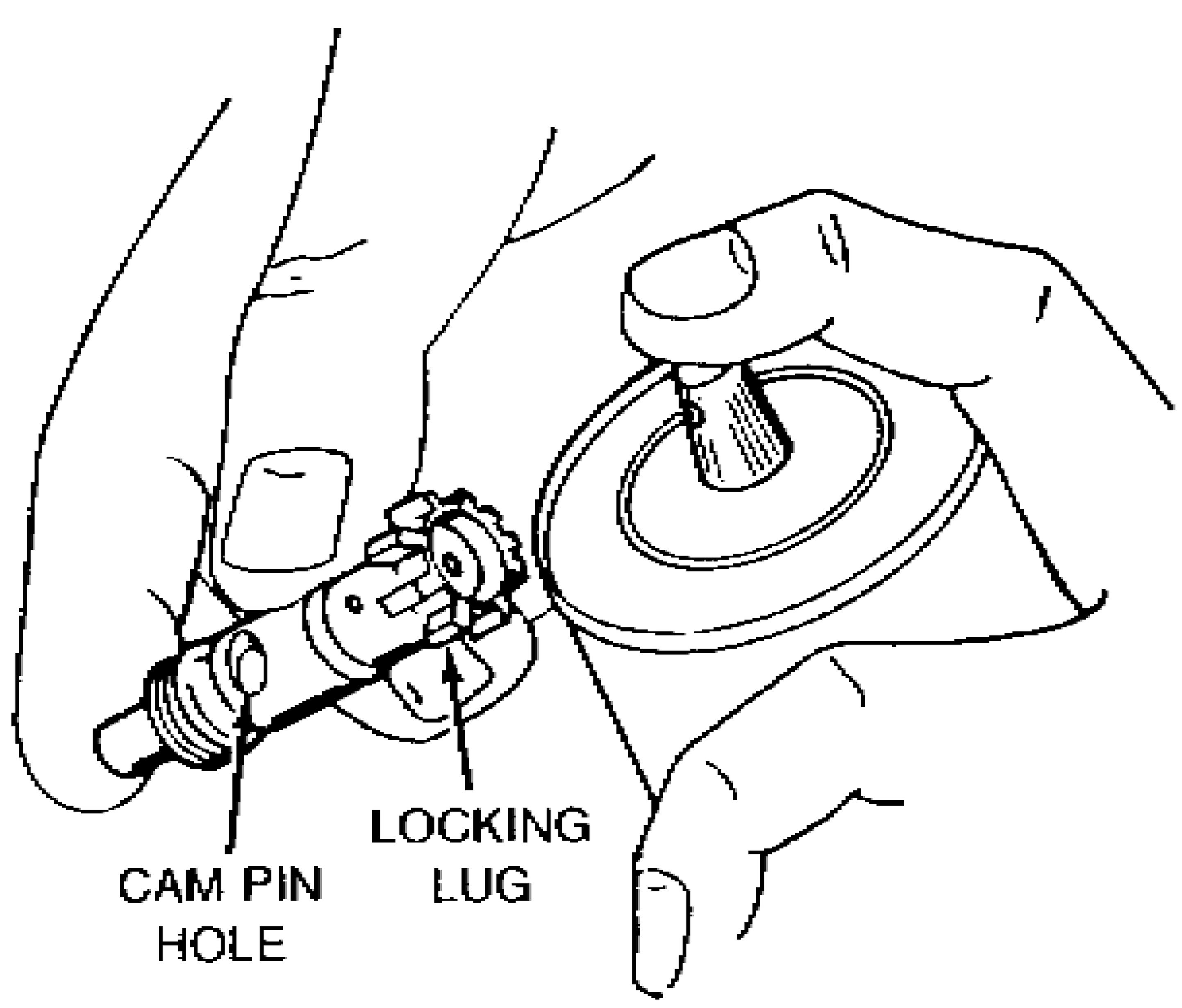
Page	Condition Description
3-11	Bolt carrier assembly removed
3-11	Bolt assembly removed

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Bolt Assembly	Bolt rings and bolt	Using flat tip screwdriver, remove the three bolt rings from the bolt.	Do not remove unless rings require replacement.



LOCATION	ITEM	ACTION	REMARKS
INSPECTION/REPAIR			
Bolt Assembly	a. Bolt ring	Visually inspect for cracks, kinks, and bends.	
		Replace if defective.	If one or more bolt rings are damaged, replace all three rings. See page 3-13 for wear check.

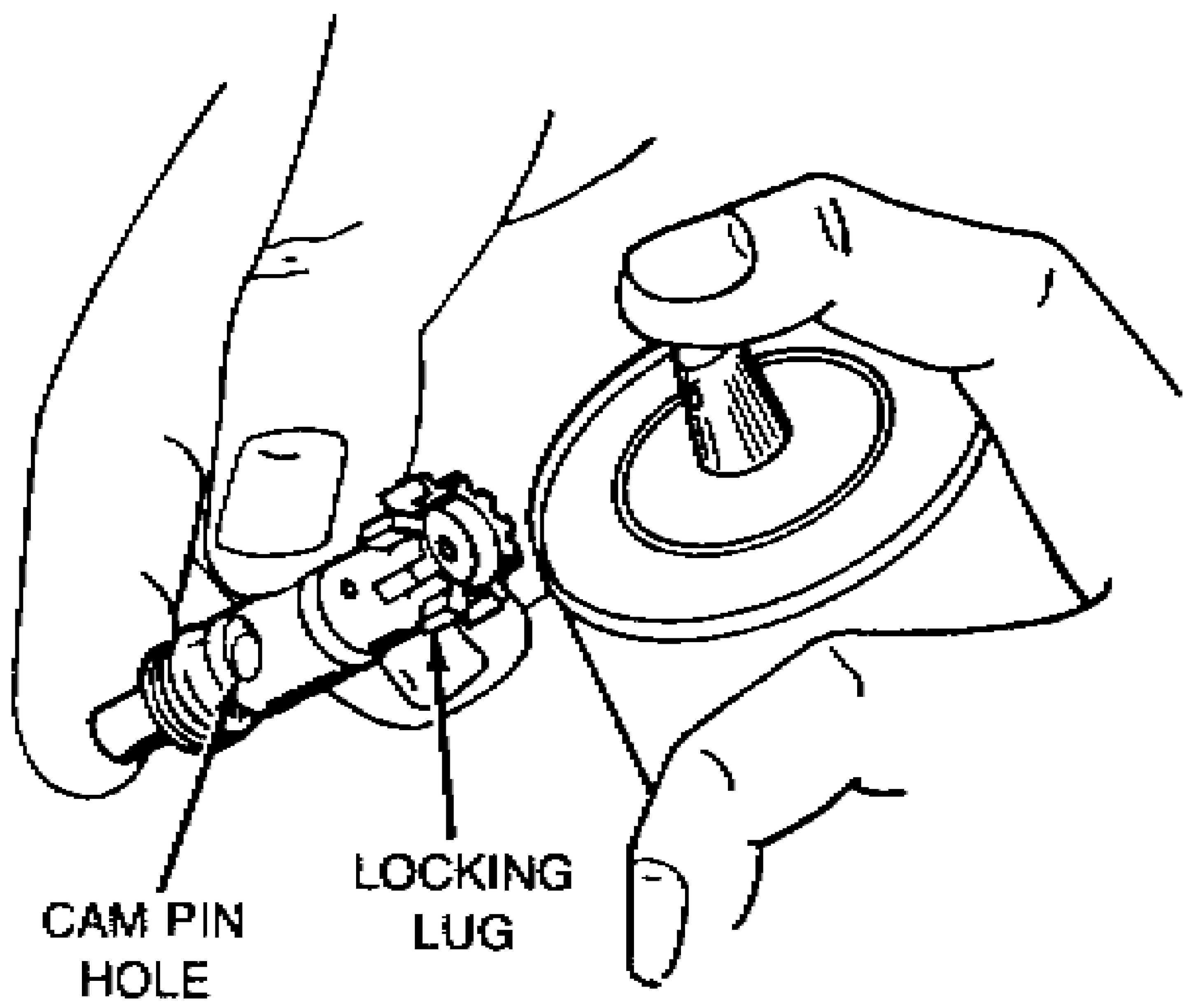
LOCATION	ITEM	ACTION	REMARKS
	b. Bolt	Inspect bolt for elongated or oversized firing pin hole using special not-go plug gage 12620101.	
		Firing pin holes which permit the special not-go plug gage to fully penetrate at any position on the circumference will be rejected.	
		Bolt face defects of large pits, or a cluster of pits, covering an area measuring approximately 1/8 inch across and more than approximately 0.010 inch deep, will be cause for rejection.	
		Bolts that contain pits extending into the firing pin hole will not be rejected unless firing pin hole gaging check determines excess wear.	
		Rings on the bolt face (machine tool marks), grooves, or ridges less than approximately 0.010 inch will not be cause for rejection.	
	c. Bolt locking lugs and bolt cam pin hole	Inspect for cracks in the locking lugs and cam pin hole area. Use black light if available; otherwise, use a glass of no more than 3X magnification or use a penetrant kit (item 14, app D).	
		Inspect for cracks (especially at base of locking lugs and cam pin hole area) using penetrant kit (item 14, app D) as follows:	
		The area to be inspected must be clean, free of oil, etc. Spray a small amount of remover on the area to be inspected, let dry, and wipe off with a wiping rag (item 15, app D).	



3-11. BOLT ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

INSPECTION/REPAIR (CONT)



Spray penetrant (only enough to wet the area) on the area of the component to be inspected.

Spray developer over the penetrant and let the developer work. Cracks will be indicated by a change in color where there is a crack. If there are cracks, the component is unserviceable.

If there are no cracks, spray remover on the area, let dry, and wipe off with a wiping rag (item 15,app D). Oil the area to prevent corrosion.

Pay close attention to the area where the locking lugs meet the body.

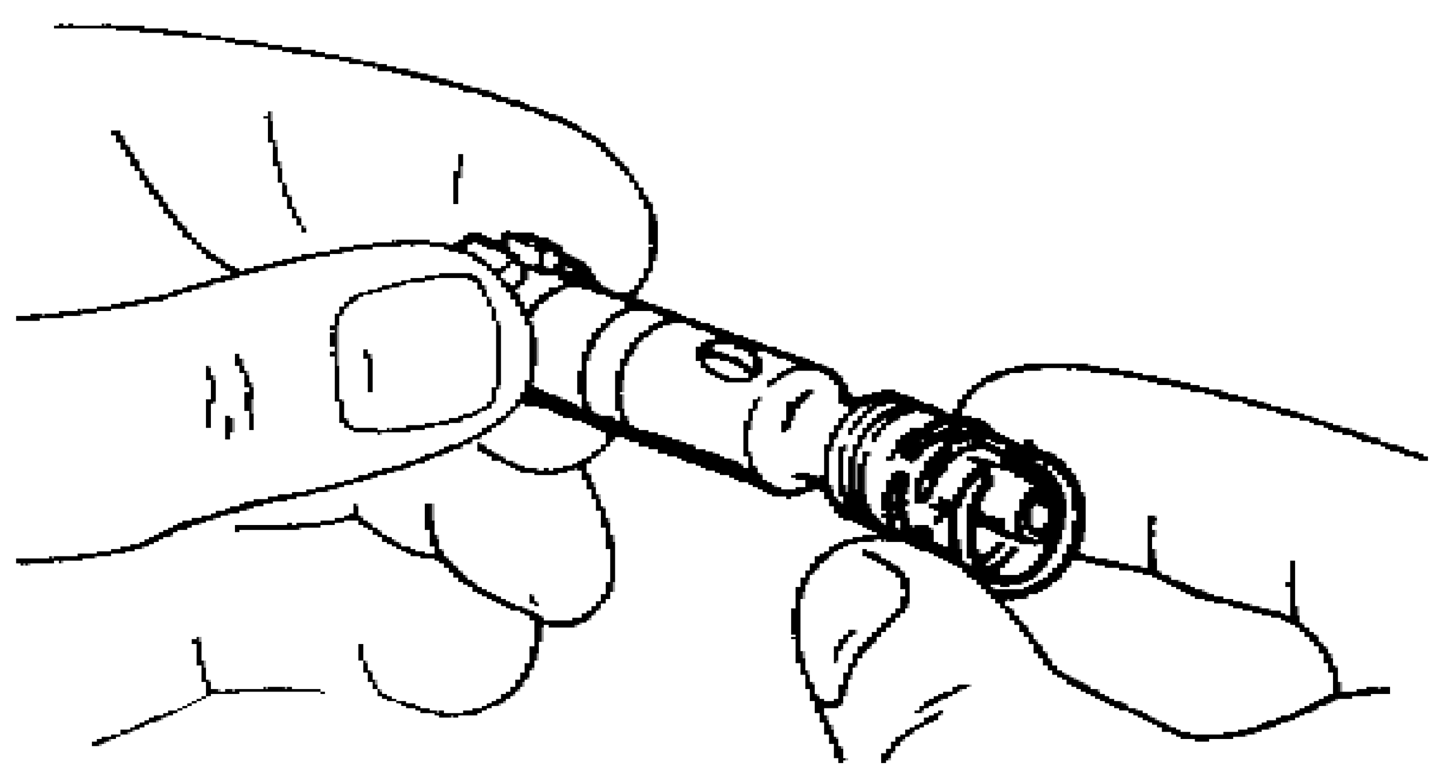
Replace bolt assembly if defective.

NOTE

Replacement of the bolt assembly will require that the headspace be tested.

REASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Bolt Assembly	Bolt rings and bolt	Install the three bolt rings one at a time onto the bolt using care not to bend them. Stagger the bolt ring gaps to prevent loss of gas pressure.	



NOTE: MAKE CERTAIN RING GAPS ARE STAGGERED TO PREVENT LOSS OF GAS PRESSURE.

3-12. KEY AND BOLT CARRIER ASSEMBLY.

This task covers:
a. Disassembly
b. Inspection/Repair
c. Reassembly

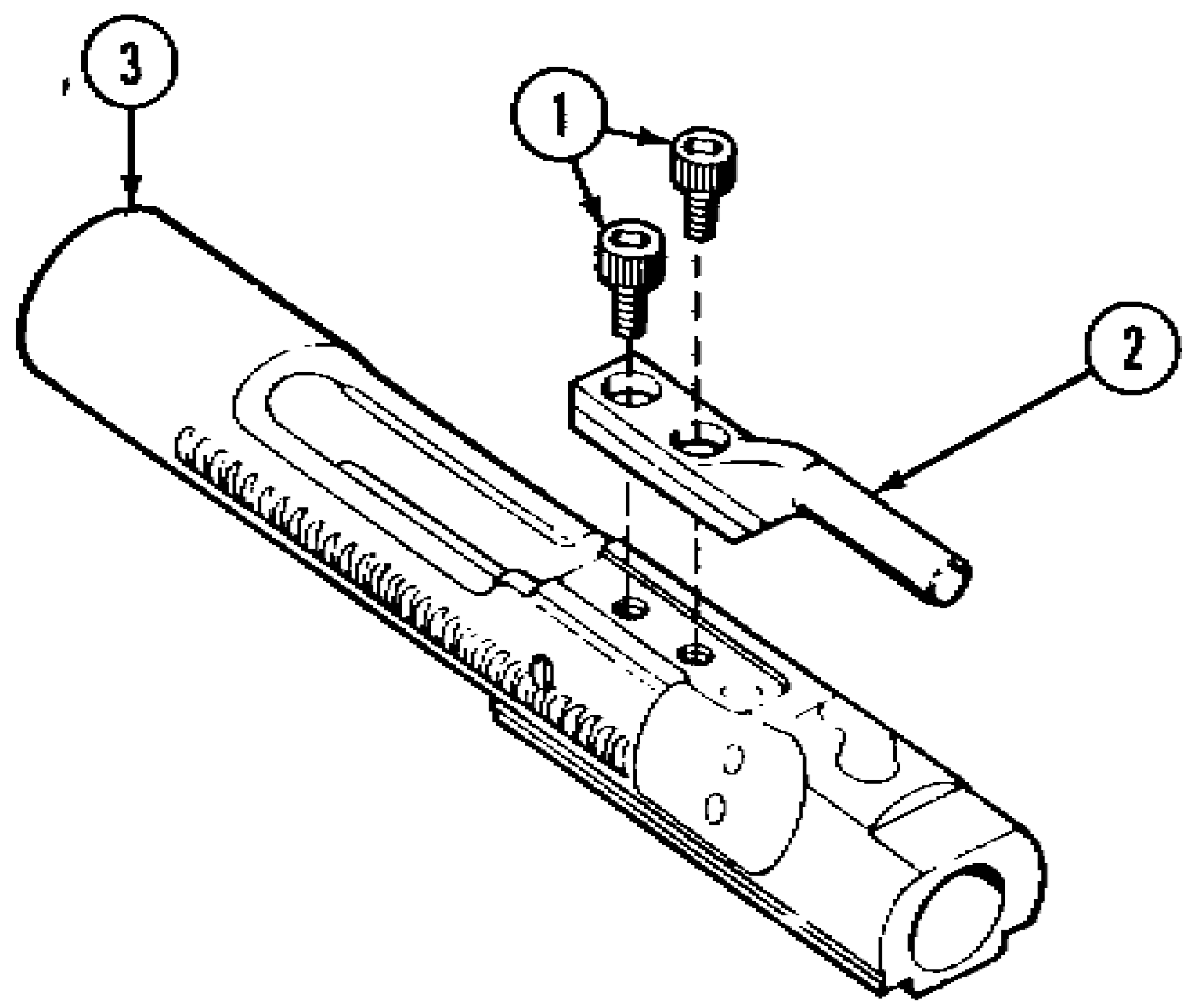
INITIAL SETUP

Tools
Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)
Small Arms Repairman Tool Kit SC 5180-95-CL-A07 (19204)
Key tool (E-4, app E)

Equipment Condition

Page	Condition Description
3-13	Key and Bolt Carrier Assembly removed
3-13	Bolt assembly removed

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Key and Bolt Carrier Assembly	a. Carrier and key screws (1)	Using socket wrench handle and socket head screw socket wrench, remove the two socket head screws.	Do not disassemble the key and bolt assembly unless the bolt carrier key or bolt carrier is defective.
	b. Bolt carrier key (2) from bolt carrier (3)	Remove.	

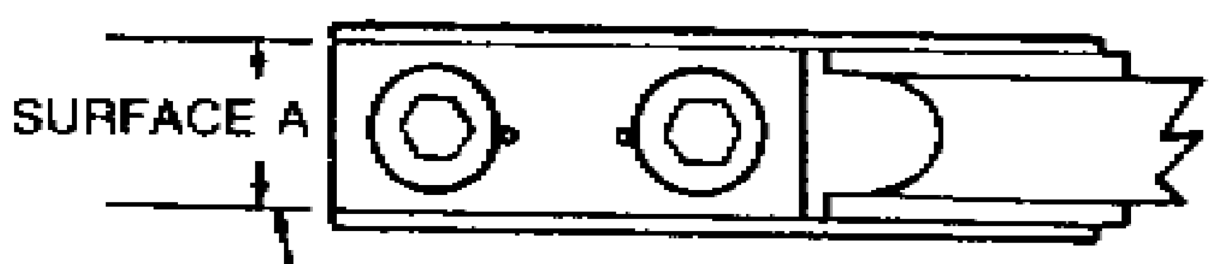


3-12. KEY AND BOLT CARRIER ASSEMBLY (CONT).

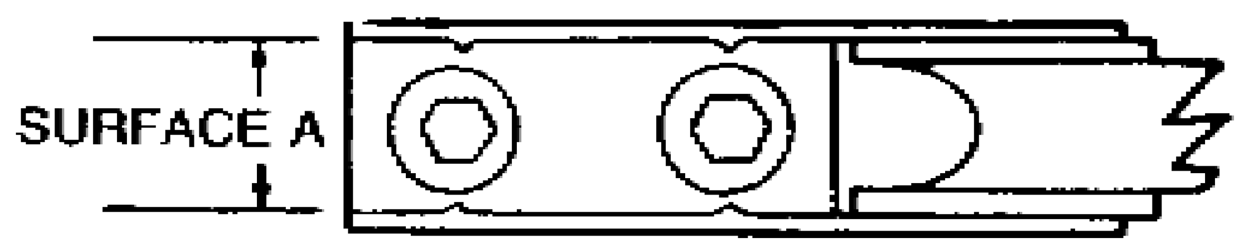
LOCATION	ITEM	ACTION	REMARKS

INSPECTION/REPAIR

Key and Bolt Carrier Assembly	a. Carrier and key screw	Inspect for looseness and proper staking.	Visually inspect the carrier and key screws for looseness and proper staking. Do not attempt to retorque if there is no loosening of the screws indicated by the staking marks.

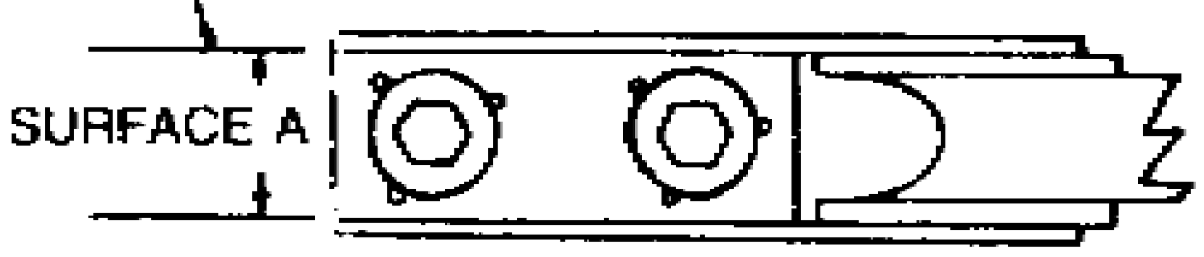


ORIGINAL STAKING

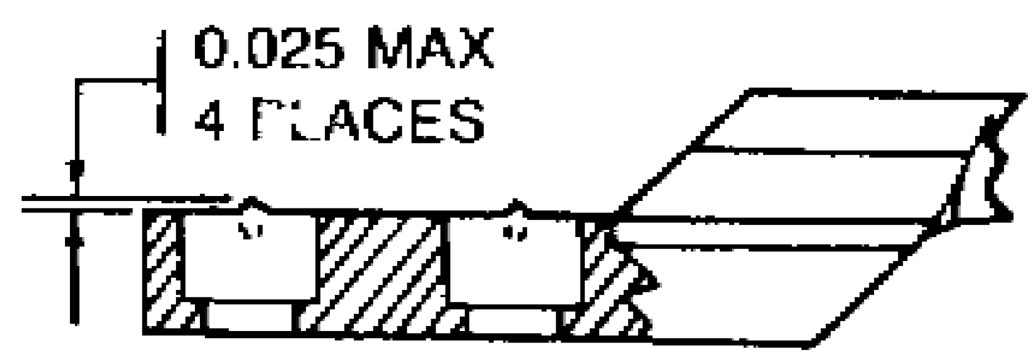


NOTE:
SURFACE "A" MUST NOT INDICATE DISTORTION OR DAMAGE WHICH IMPAIRS PARALLELISM.

NOTE:
SURFACE "A" MUST NOT INDICATE ANY LOSS OF PARALLELISM. A MAXIMUM OF 0.025 INCH PROTRUSION IN AN UPWARD DIRECTION IS PERMISSIBLE.



FIELD REPLACEMENT STAKING

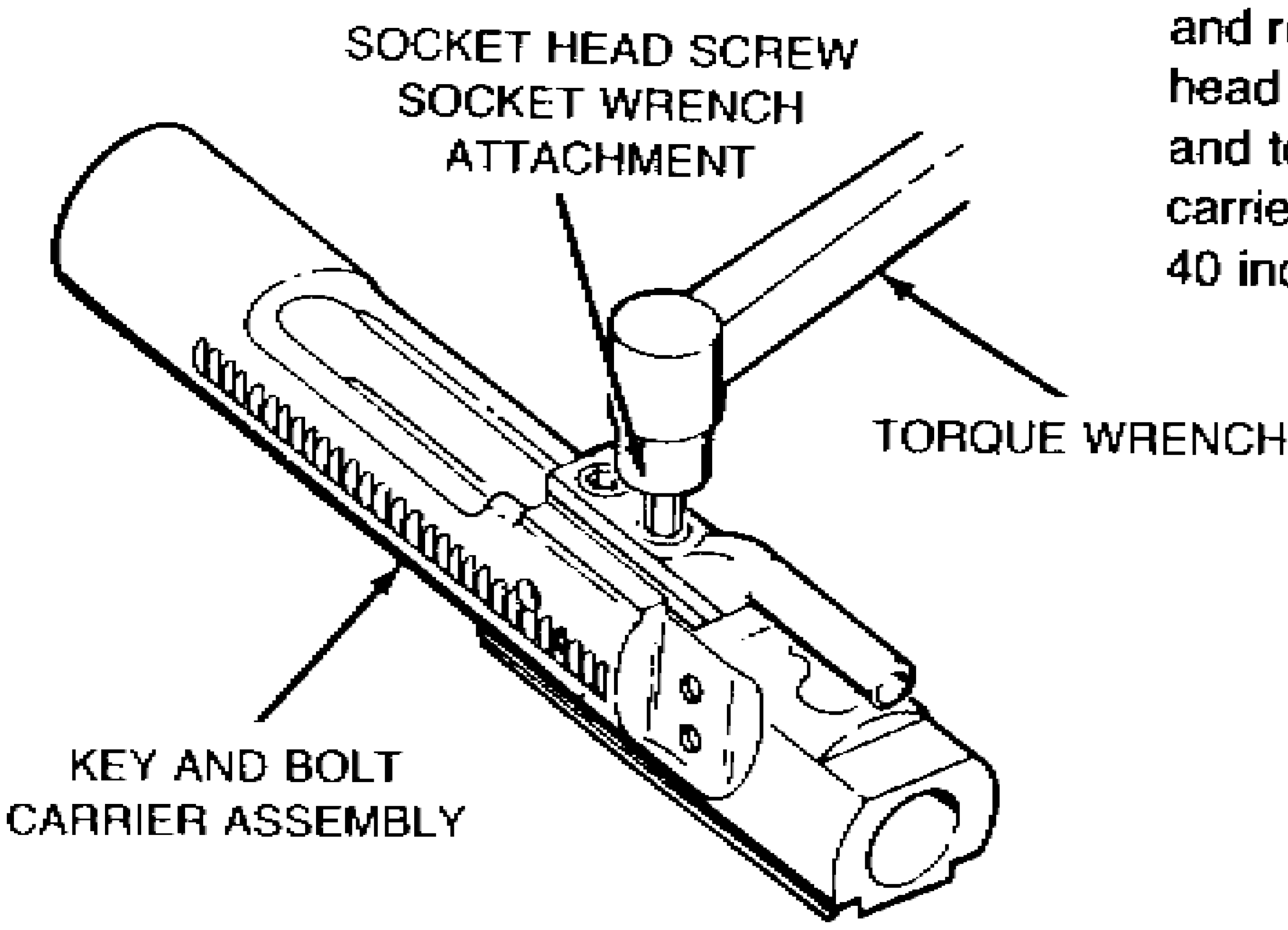


REVISED STAKING

NOTE

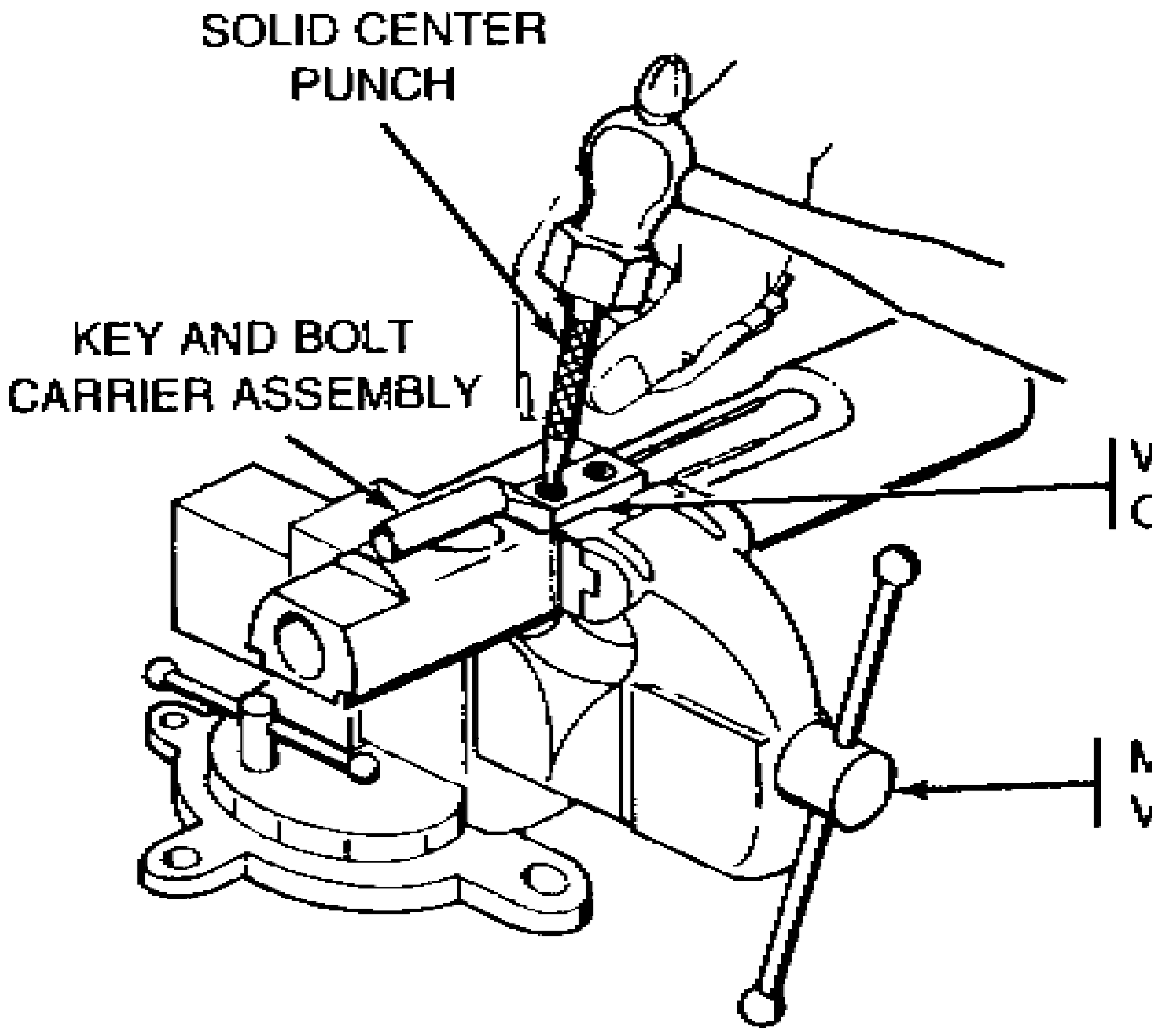
Surface "A" must not indicate distortion or damage which impairs parallelism.

Surface "A" must not indicate any loss of parallelism. A maximum of 0.025 inch protrusion in an upward direction is permissible.



		Repair by replacing screws and torquing carrier and key screws and restaking. Using the socket head screw wrench attachment and torque wrench, torque the carrier and key screws to 35 to 40 inch pounds.	Do not reuse old screws. New screws must be used at assembly.

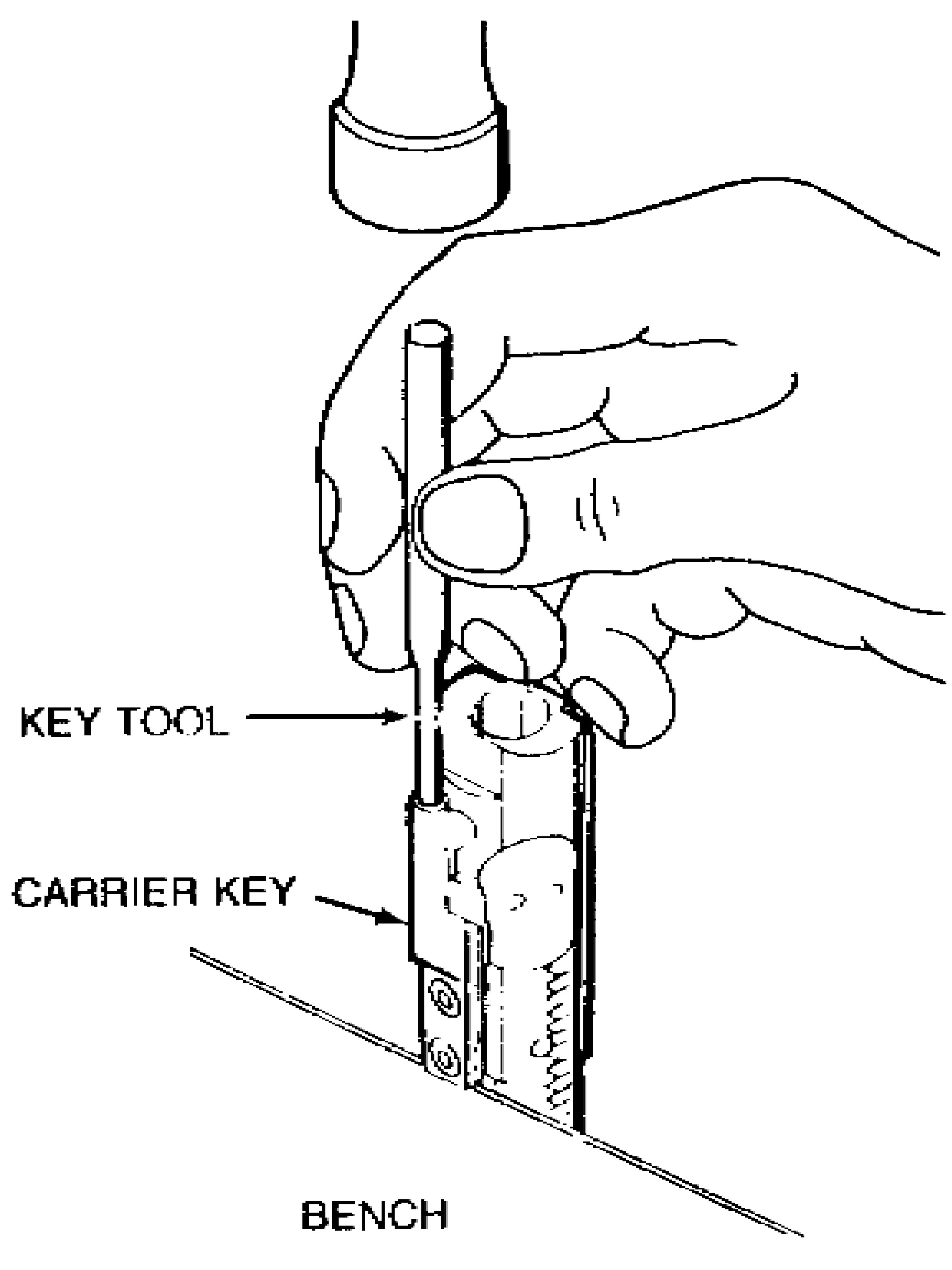
LOCATION	ITEM	ACTION	REMARKS
		Use vise jaw caps, machinist's vise, solid center punch, and hand hammer to stake the two carrier and key screws in three places.	Field staking method will be used by field units.



CAUTION

Extreme care must be exercised during the following procedure to assure that the striking force is not directed to the attaching screws and that the tube portion is not enlarged or flared beyond original requirements. Such enlargement would permit loss of gas pressure when the key and gas tube come together during functioning.

LOCATION	ITEM	ACTION	REMARKS
	b. Key	Inspect for burrs, breaks, or bends. Repair small dents and/or distortions using fabricated key tool (E-4, app E) as follows: Place the key and bolt carrier assembly in a vertical position, supported so that contact is made with the rear surface of the key. Insert the small end of the key tool (E-4, app E) into the tube portion of the key. Strike the large end of the key tool (lightly) with a 3-ounce, soft-brass hammer. Repeat striking (gently) until the carrier key is reformed to original configuration.	

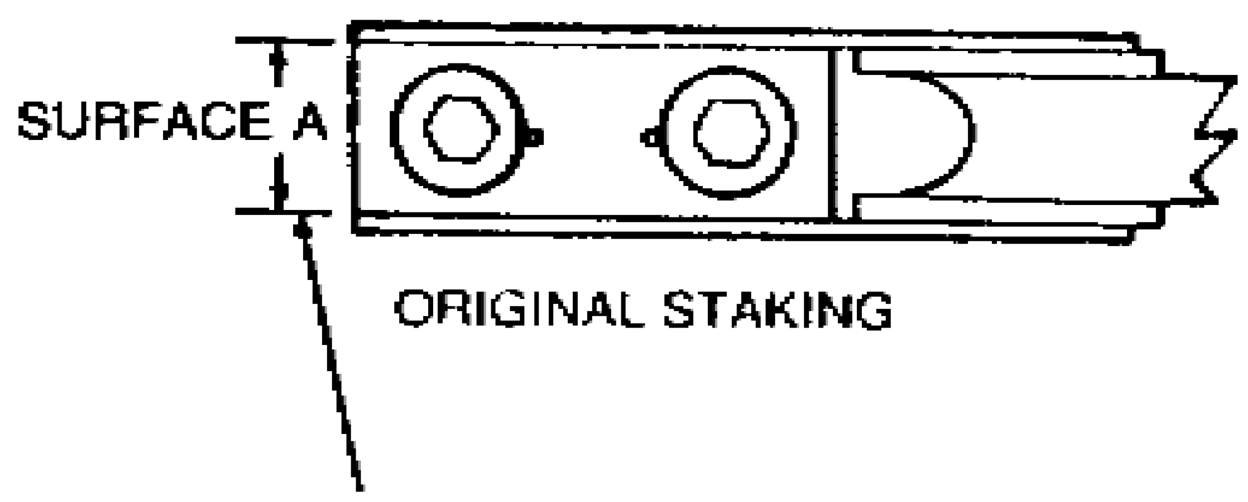


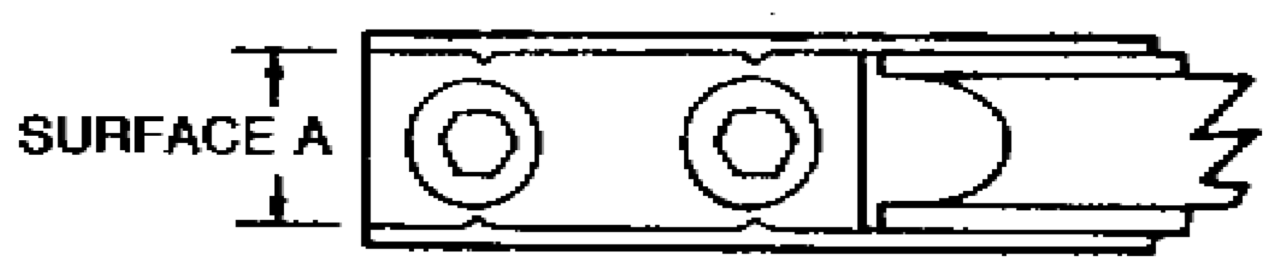
3-12. KEY AND BOLT CARRIER ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
	c. Bolt carrier assembly	Inspect for burrs, cracks, and wear.	

REASSEMBLY

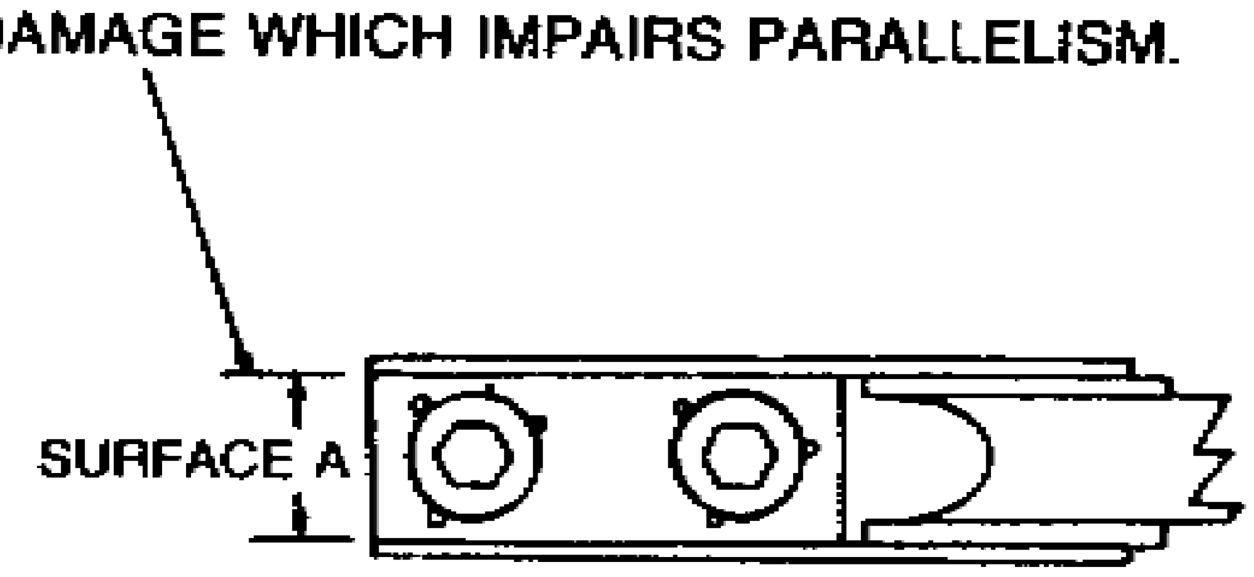
LOCATION	ITEM	ACTION	REMARKS
Key and Bolt Carrier Assembly	a. Bolt carrier key and bolt carrier	Install and position bolt carrier key onto bolt carrier.	
	b. Carrier and key screw	Install the two carrier and key screws.	Always use new screws.
		Torque and stake.	See page 3-20 and below.



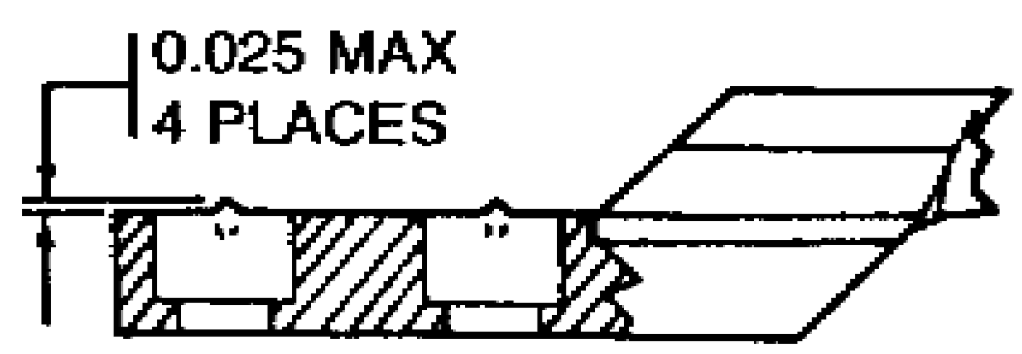


NOTE:
SURFACE "A" MUST NOT INDICATE ANY LOSS OF PARALLELISM. A MAXIMUM OF 0.025 INCH PROTRUSION IN AN UPWARD DIRECTION IS PERMISSIBLE.

NOTE:
SURFACE "A" MUST NOT INDICATE DISTORTION OR DAMAGE WHICH IMPAIRS PARALLELISM.



FIELD REPLACEMENT STAKING



REVISED STAKING

NOTE

If the bolt carrier key is replaced, it may be necessary to create a seal between the bolt carrier and key by firing three through eight rounds. Manual operation of the rifle may be required.

3-13. UPPER RECEIVER AND BARREL ASSEMBLY.

This task covers:

a. Disassembly
b. Inspection/Cleaning
c. Repair
d. Reassembly
e. Test

INITIAL SETUP

Applicable Configuration
All M16/M16A1 rifles except as noted.

Test Equipment
M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8425685 (19204)

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)
Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)

Materials/Parts
Abrasive cloth (item 6, app D)
Carbon removing compound (P-C-111) (item 4, app D)
Chemical and oil protective gloves (item 10A, app D)
Dry cleaning solvent (item 9, app D)
Gloves (item 10A, app D)
Molybdenum disulfide grease (item 11, app D)
Sealing compound (item 16, app D)
Solid film lubricant (item 13, app D)
Technical dichloremethane (item 8, app D)
Wash pan (item 13A, app D)

References
FM 23-9
TM 9-1005-249-10
TM 9-1005-301-30

Equipment Condition

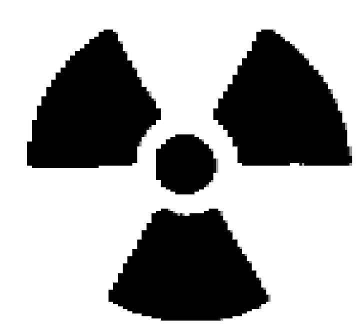
Page	Condition Description
3-10	Upper receiver and barrel assembly removed from lower receiver.

General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

When using solid film lubricant or dichloromethane, be sure the area is well ventilated.

When using P-C-111, avoid skin contact. If P-C-111 comes in contact with the skin, wash thoroughly with running water. Using a good lanolin base cream after exposure to the compound is helpful. Using gloves and protective equipment is recommended.

Dry cleaning solvent is flammable and toxic and should be used in a well-ventilated area. The use of rubber gloves is necessary to protect the skin when washing rifle parts.



Upper receiver and barrel assembly may be equipped with low light level front and rear sights. The front sight contains radioactive material. If so equipped, do not insert metal objects into the post slot or otherwise treat roughly to cause breakage of the radioactive element.

3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

DISASSEMBLY

WARNING

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

When using solid film lubricant or dichloromethane, be sure the area is well ventilated.

When using P-C-111, avoid skin contact. If P-C-111 comes in contact with the skin, wash thoroughly with running water. Using a good lanolin base cream after exposure to compound is helpful. Using gloves and protective equipment is recommended.



Upper receiver and barrel assembly may be equipped with low light level front and rear sights. The front sight contains radioactive material. If so equipped, do not insert metal objects into the post slot or otherwise treat roughly to cause breakage of the radioactive element.

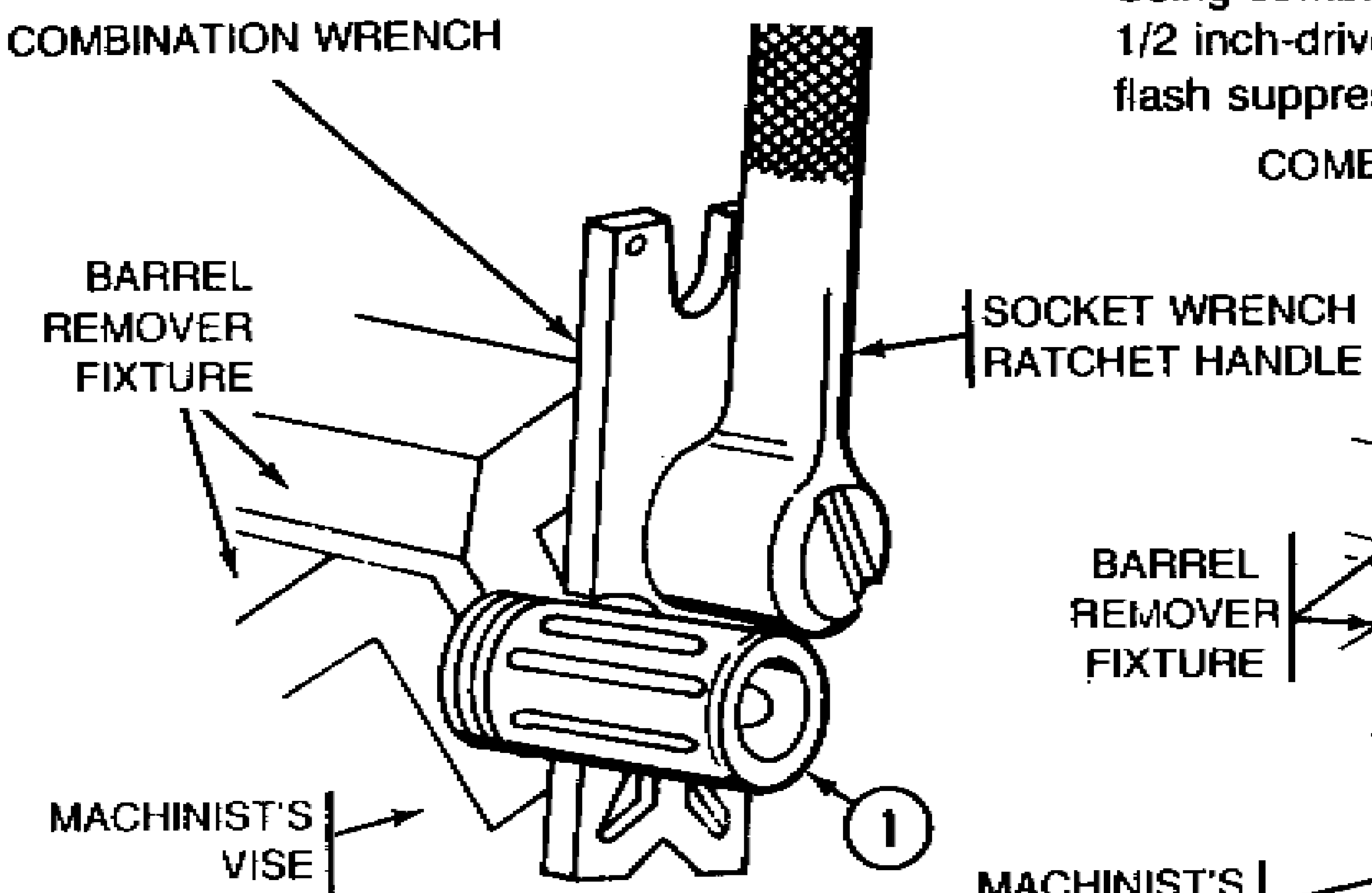
NOTE

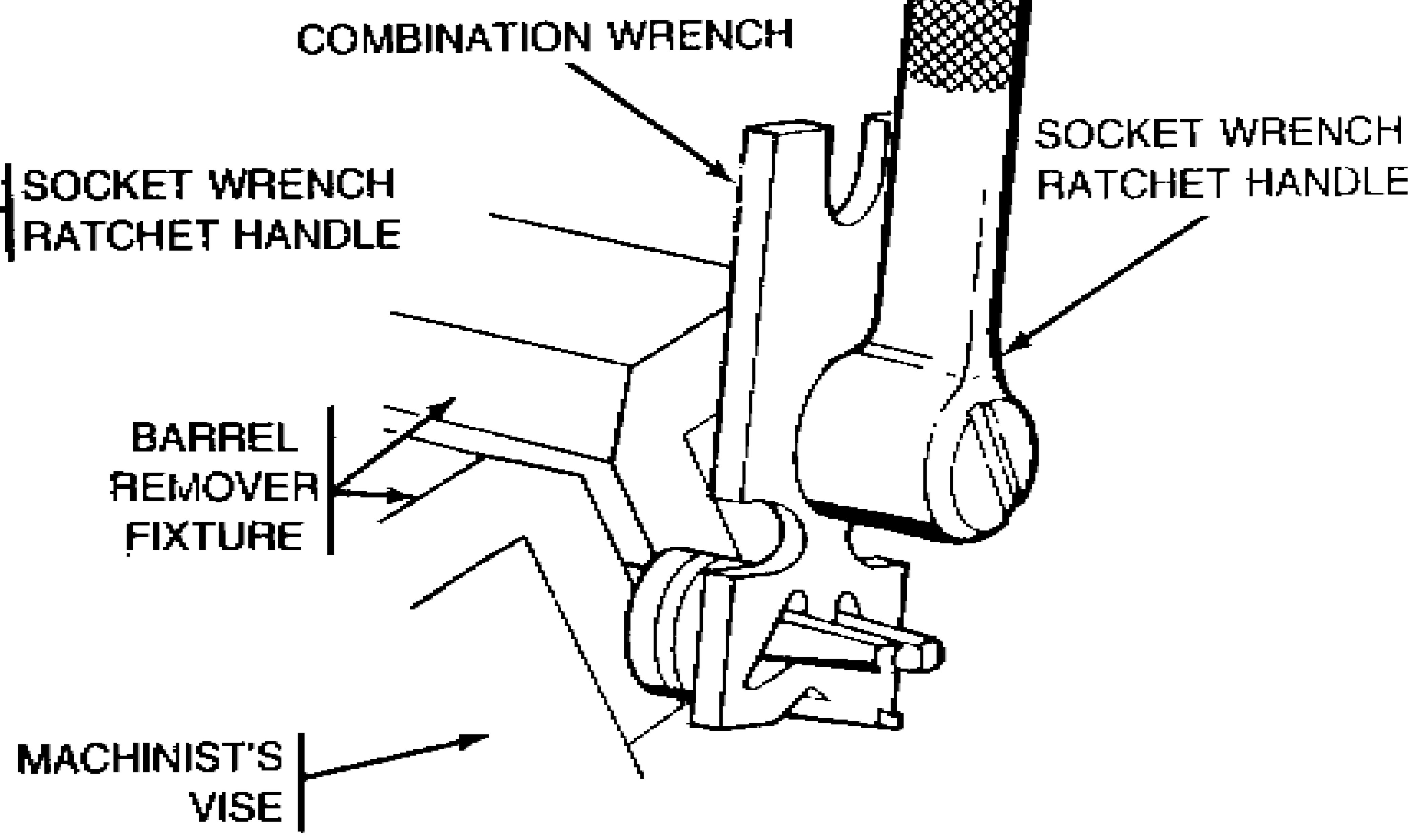
Refer to TM 9-1005-249-10 for "buddy system" procedure on removing handguards.

LOCATION	ITEM	ACTION	REMARKS
1 Upper Receiver and Barrel Assembly	a. Hand guards	Remove.	
	b. Flash suppressor (1 or 2)	Remove. Using barrel remover fixture, place upper receiver and barrel assembly in vise.	There are two types of flash suppressors. The earliest design is open ended with three prongs. The latest is a closed-end design and is the only authorized repair part. All M16A1 rifles assigned to divisional combat units should be equipped with the closed end suppressor. M16A1 rifles assigned to noncombat units and training center units may be equipped with either the open or closed type flash suppressor.

LOCATION	ITEM	ACTION	REMARKS

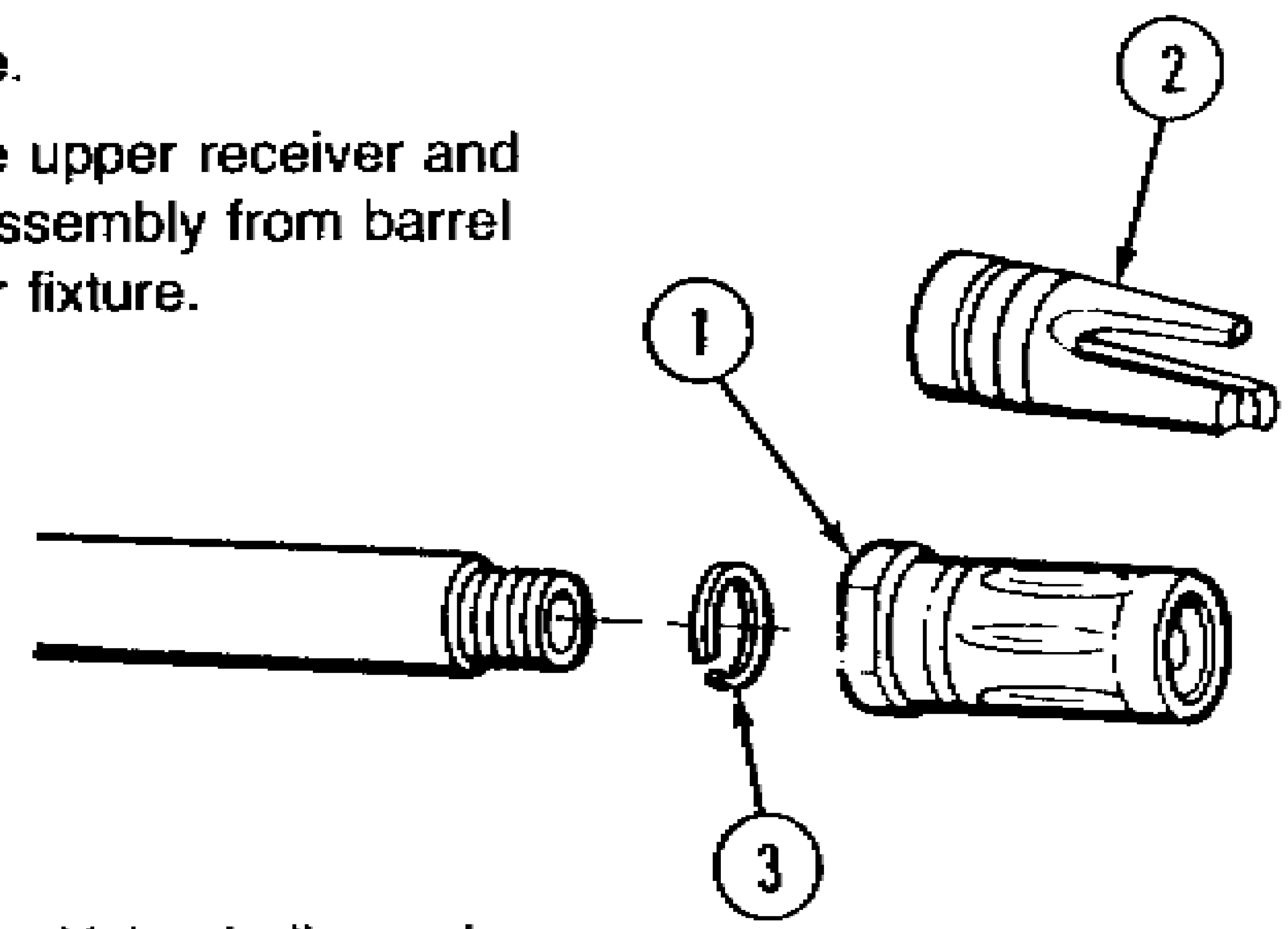
Using combination wrench and 1/2 inch-drive handle, remove flash suppressor.



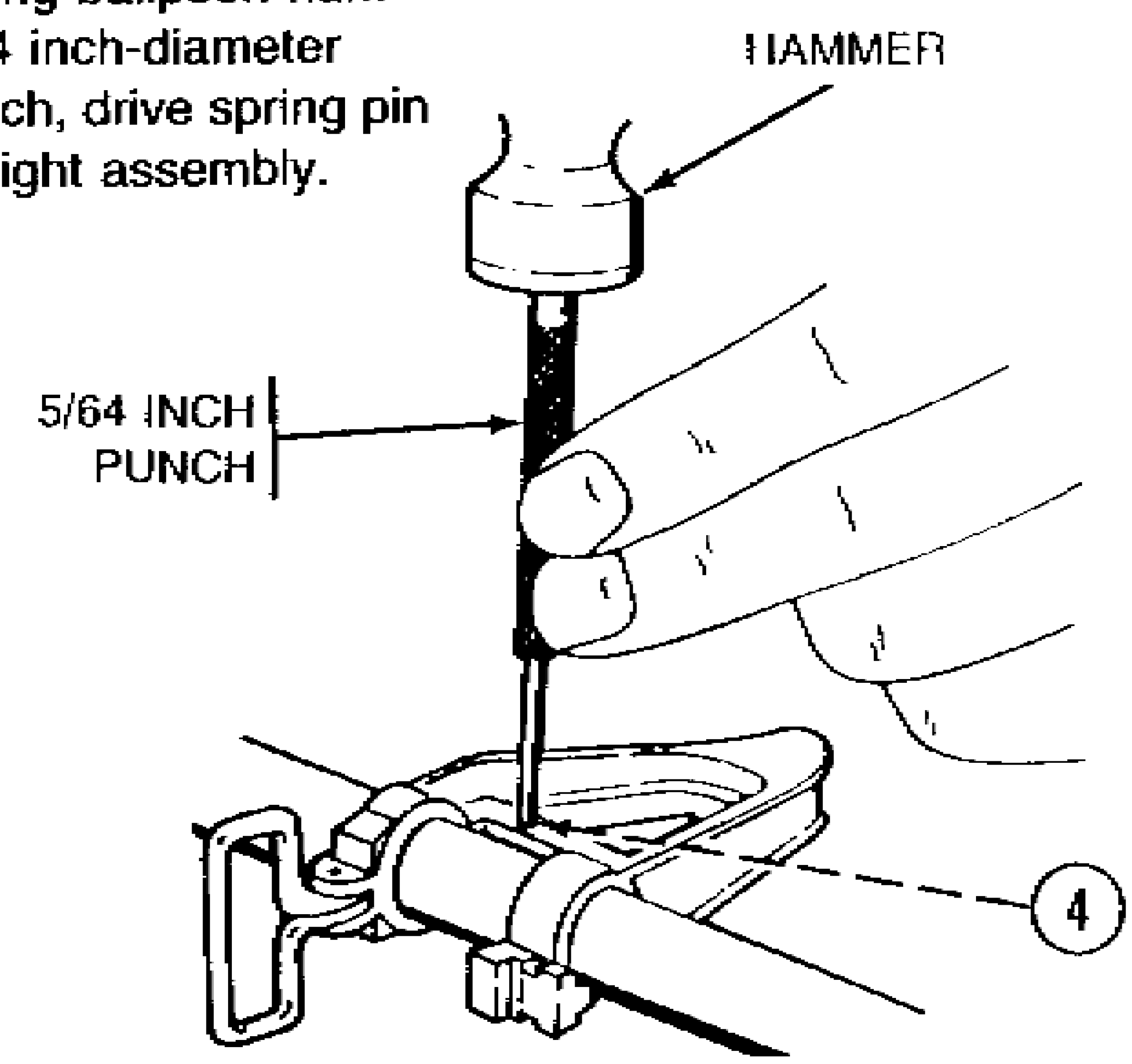


c. Lock washer (3) — Remove.

Remove upper receiver and barrel assembly from barrel remover fixture.



d. Spring pin (4) — Remove. Using ballpeen hammer and 5/64 inch-diameter drive pin punch, drive spring pin out of front sight assembly.

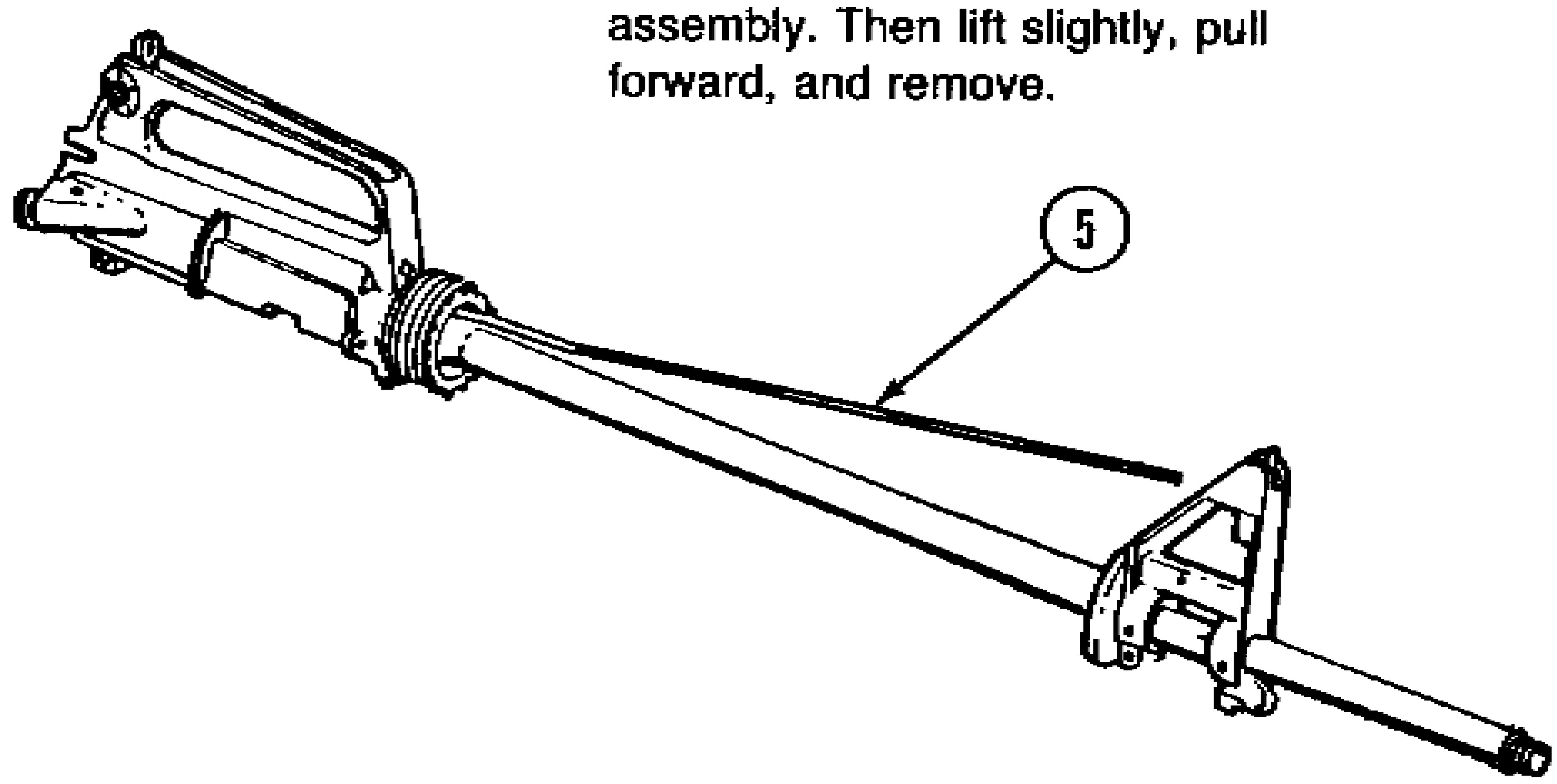


3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

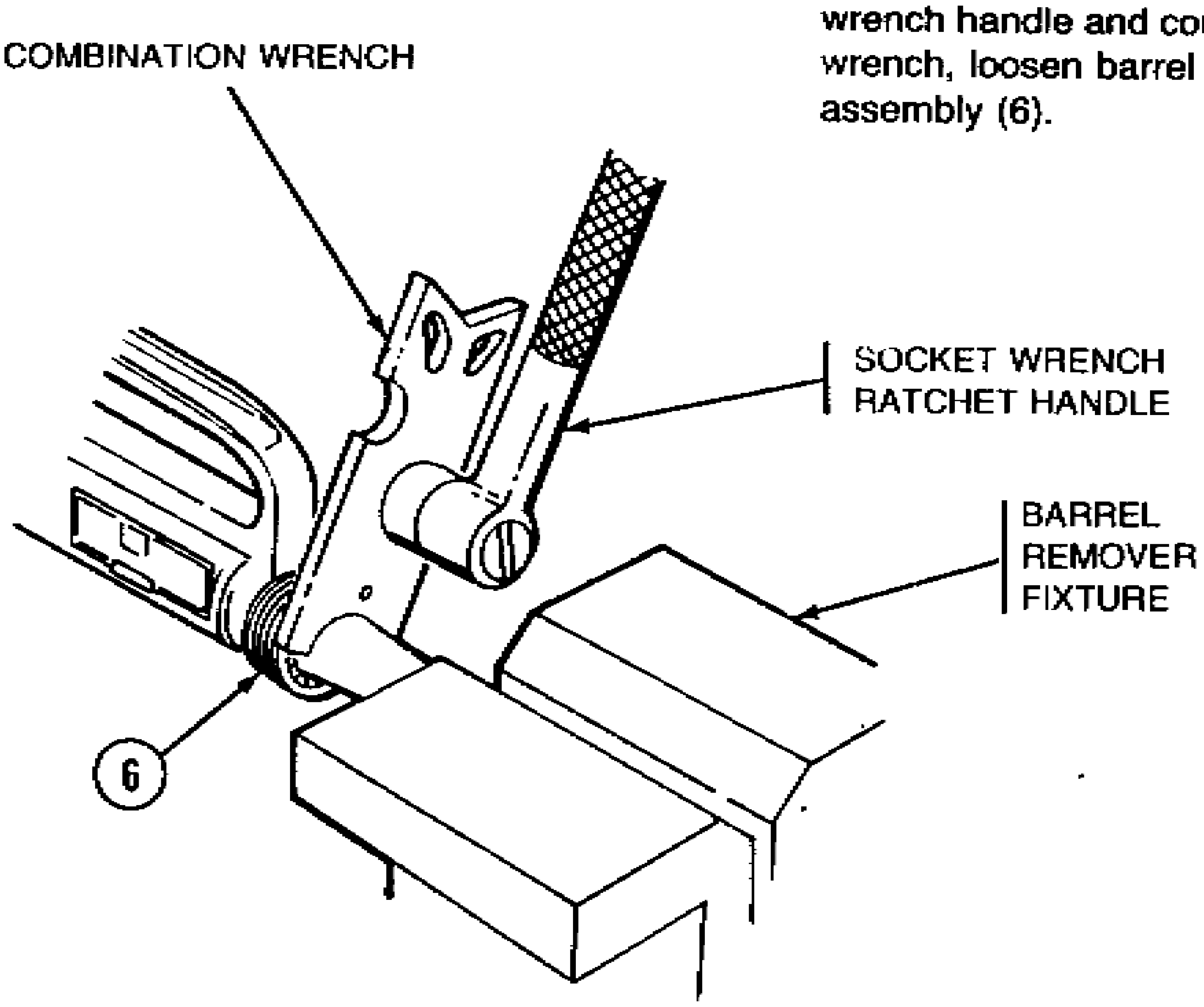
LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY (CONT)

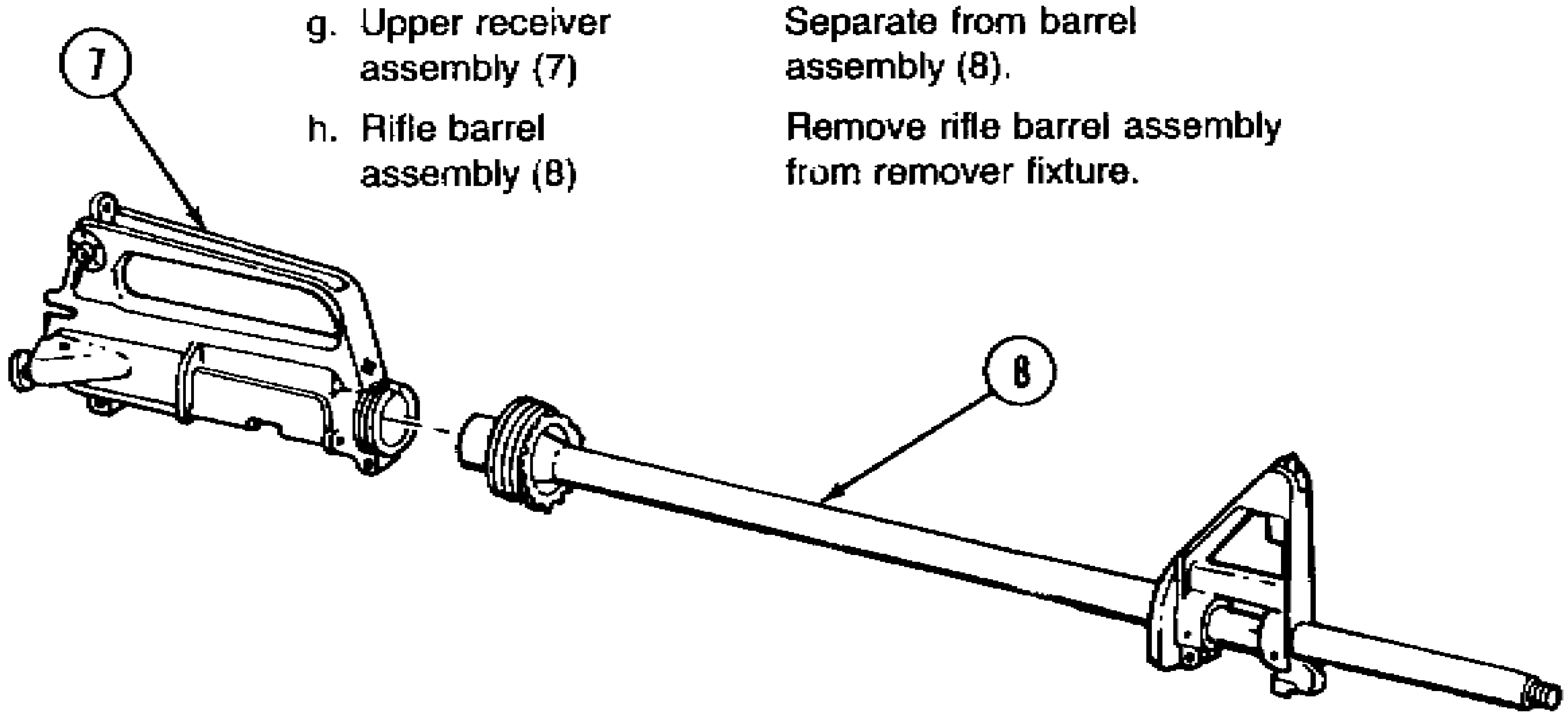
LOCATION	ITEM	ACTION	REMARKS
	e. Gas tube (5)	Remove. Slide gas tube back into receiver to clear front assembly. Then lift slightly, pull forward, and remove.	



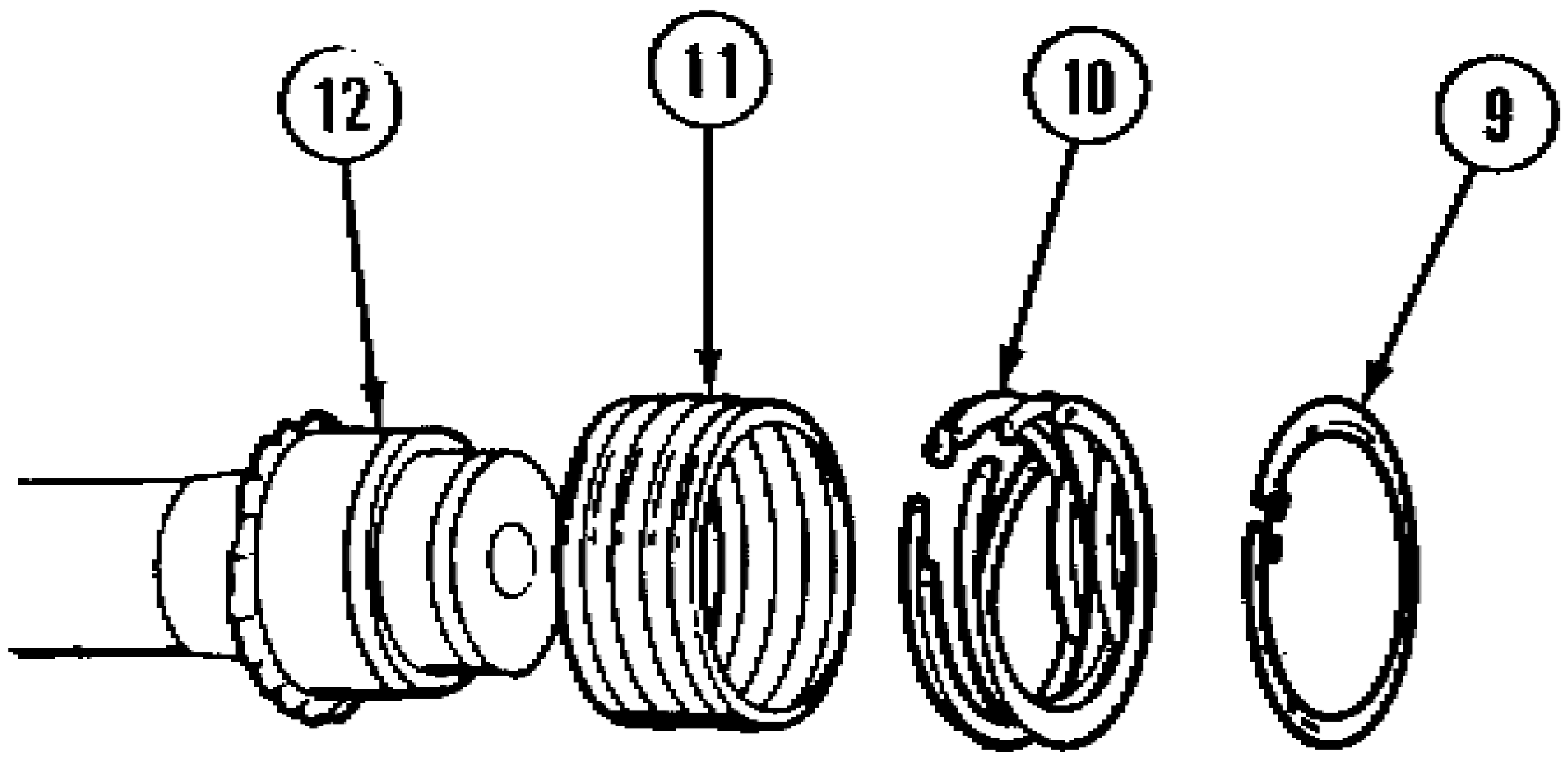
LOCATION	ITEM	ACTION	REMARKS
	f. Barrel nut assembly (6)	Place upper receiver and barrel assembly into barrel remover fixture and clamp into machinist's vise. Using socket wrench handle and combination wrench, loosen barrel nut assembly (6).	Be sure all three drive pins on combination wrench are engaged with barrel nut assembly. Wrench must be pushed toward upper receiver to compress the slip ring spring.

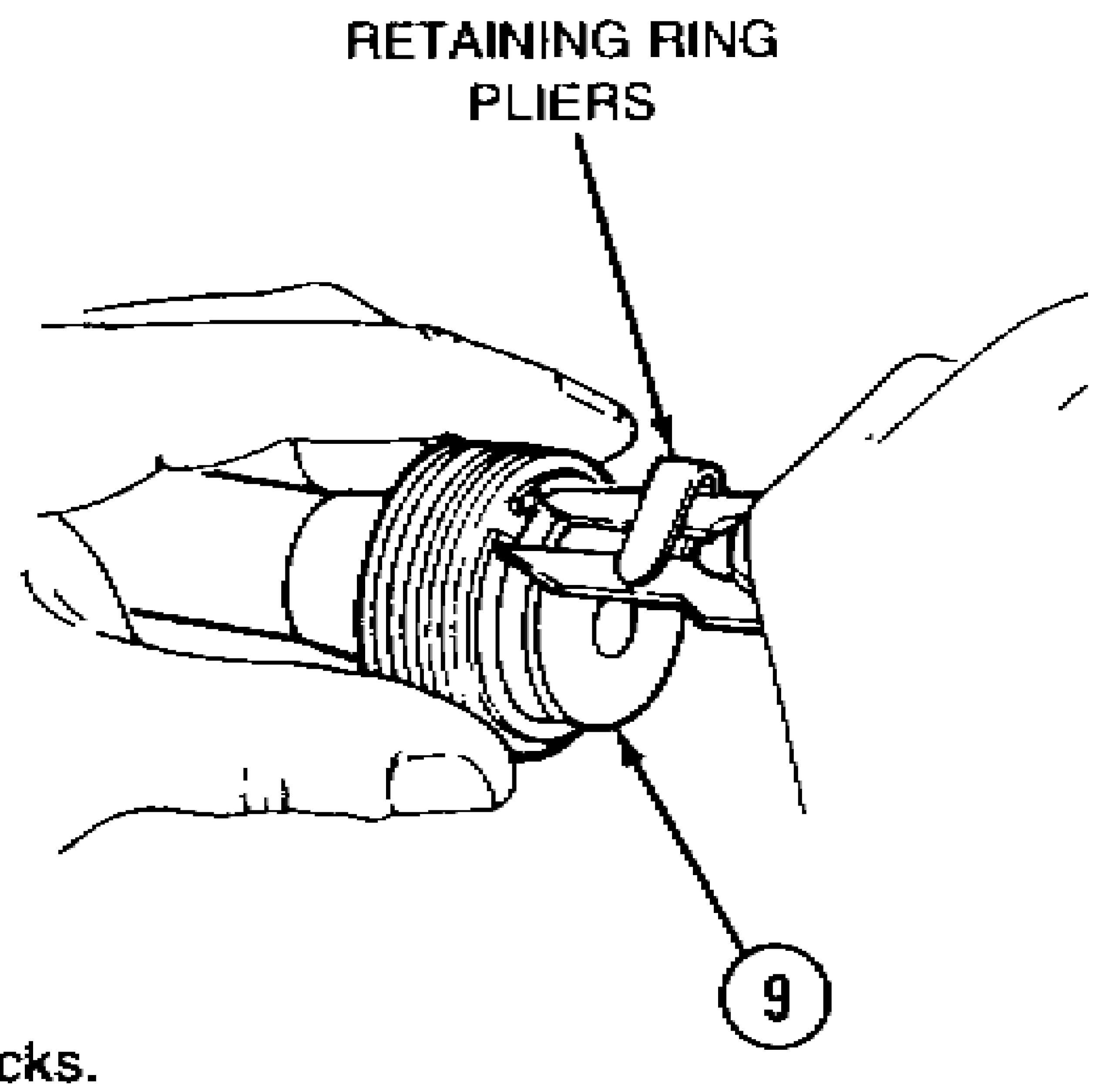


LOCATION	ITEM	ACTION	REMARKS
	g. Upper receiver assembly (7)	Separate from barrel assembly (8).	
	h. Rifle barrel assembly (8)	Remove rifle barrel assembly from remover fixture.	



LOCATION	ITEM	ACTION	REMARKS
2 Barrel Nut Assembly	a. Retaining ring (9)	Remove using retaining ring pliers.	
	b. Slip ring spring (10) and handguard slip ring (11)	Remove.	
	c. Barrel nut (12)		Do not remove barrel nut (12) from the rifle barrel assembly.





INSPECTION/CLEANING

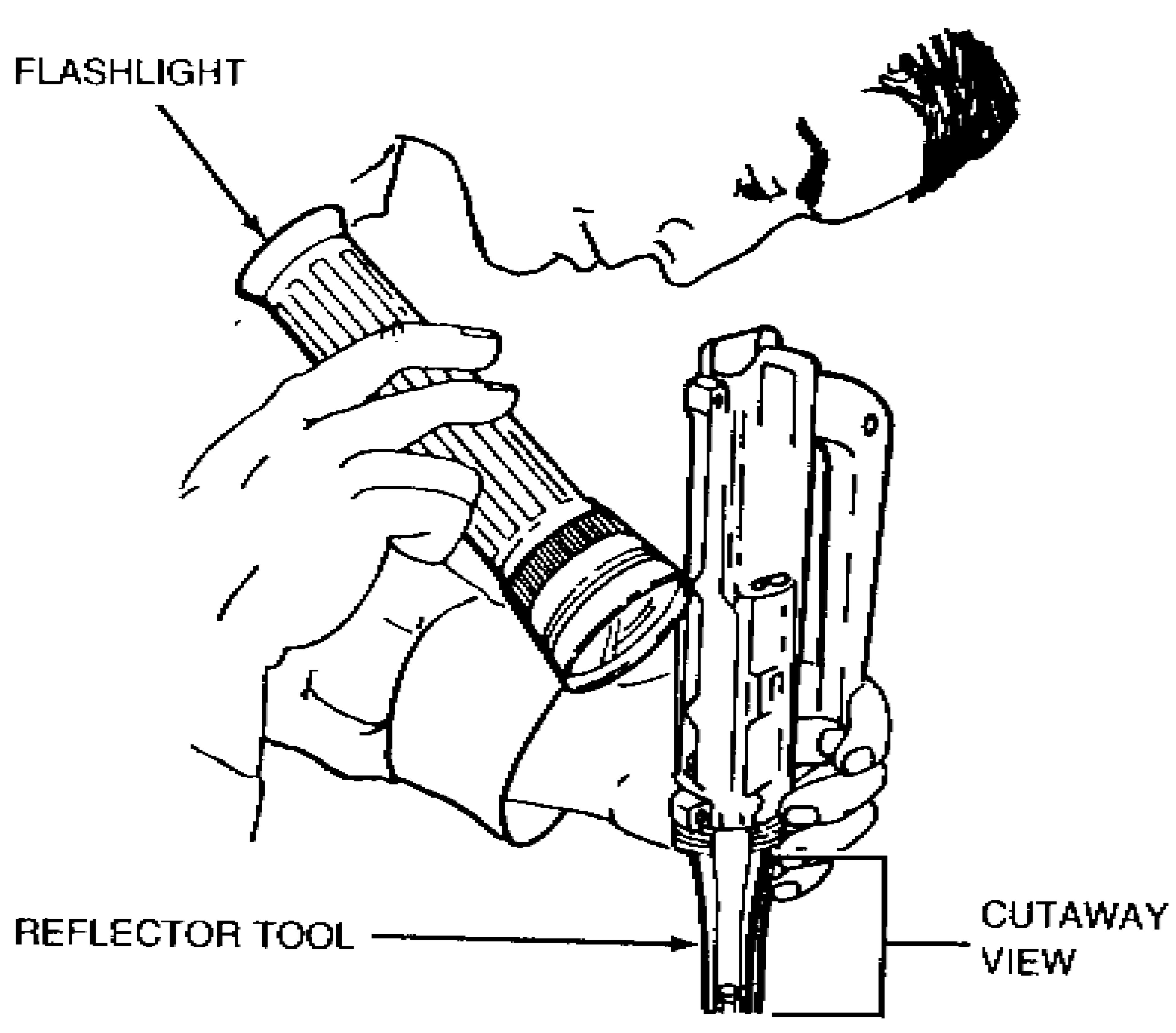
LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. Gas tube	Inspect for cracks.	
		Replace if defective.	
		Use P-C-111, carbon removing compound (item 4, app D), to remove carbon deposits from interior and exterior of gas tube.	If a large amount of carbon is found and cannot be removed, replace the gas tube.

3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

INSPECTION/CLEANING (CONT)

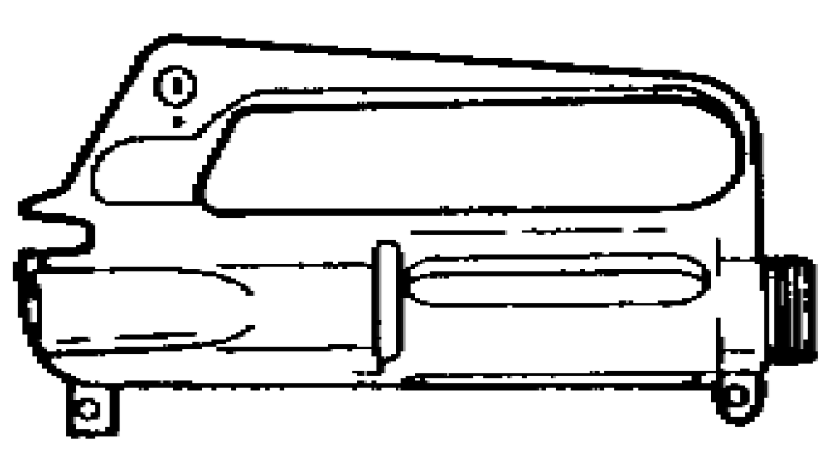
	b. Bore	Inspect for burrs, cracks, rust, bulges, and pits.	Pits no wider than a land or groove and no longer than 3/8 inch are allowed in the bore. Lands that appear dark blue due to coating of gilding metal from projectiles are allowable.
		Replace rifle barrel assembly if defective.	Definitely ringed bores or bores ringed sufficiently to bulge the outside surface of the barrel are cause for rejection.
	c. Chamber	Inspect chamber using reflector tool and flashlight.	Pits 1/8 inch in length are cause for rejection.
		Replace rifle barrel assembly if defective.	



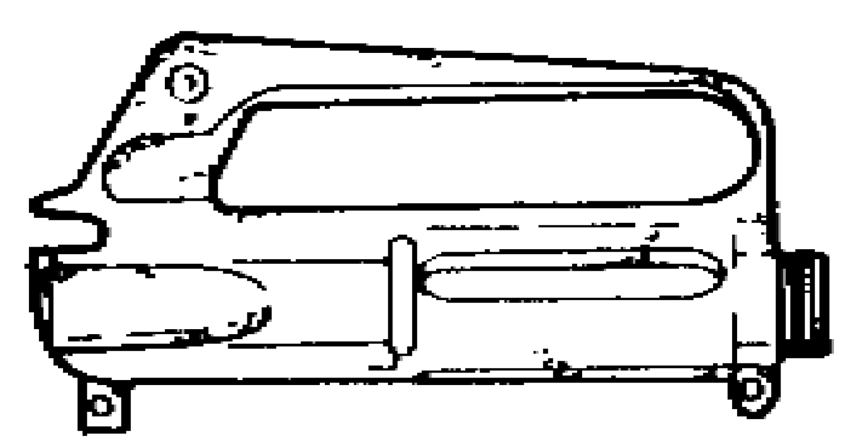
NOTE

Chamber may be inspected with or without upper receiver assembled to the barrel assembly.

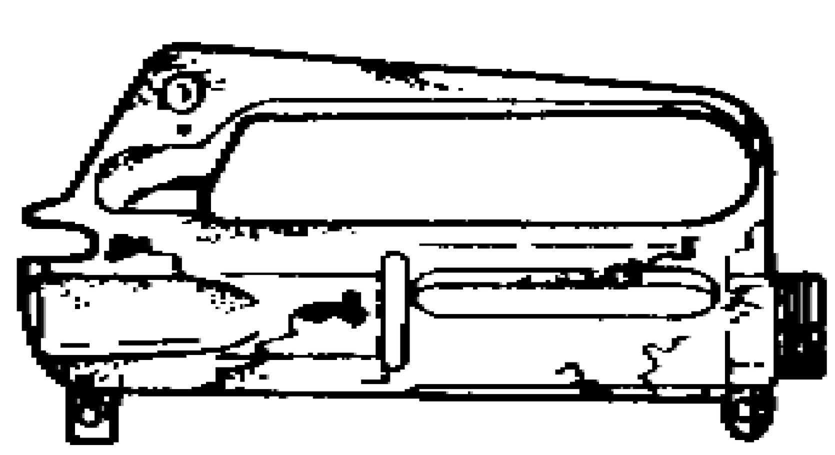
LOCATION	ITEM	ACTION	REMARKS
	d. Upper receiver	Inspect for cracks, corrosion, mutilation, wear, or damage.	Small dents or gouges that do not affect functioning will not be cause for rejection. If receiver contains cracks or holes, the receiver will be replaced.
		Inspect springs for breaks, deformation, and rust.	
		Repair corroded surfaces.	Sand corroded area with abrasive cloth (item 6, app D) and make sure all corrosion has been removed. Wash area with technical dichloromethane (item 8, app D) (methylenechloride) to remove all dirt, grease, and foreign material. Apply sealing compound (item 16, app D), mixed in accordance with manufacturer's directions, to areas to be filled. Spread sealing compound as smoothly as possible into defective area using a putty knife or similar tool. **NOTE** Do not feather edges. Place a sheet of polyethylene, cut to size, over filled area. Rub by hand or smooth using small roller.



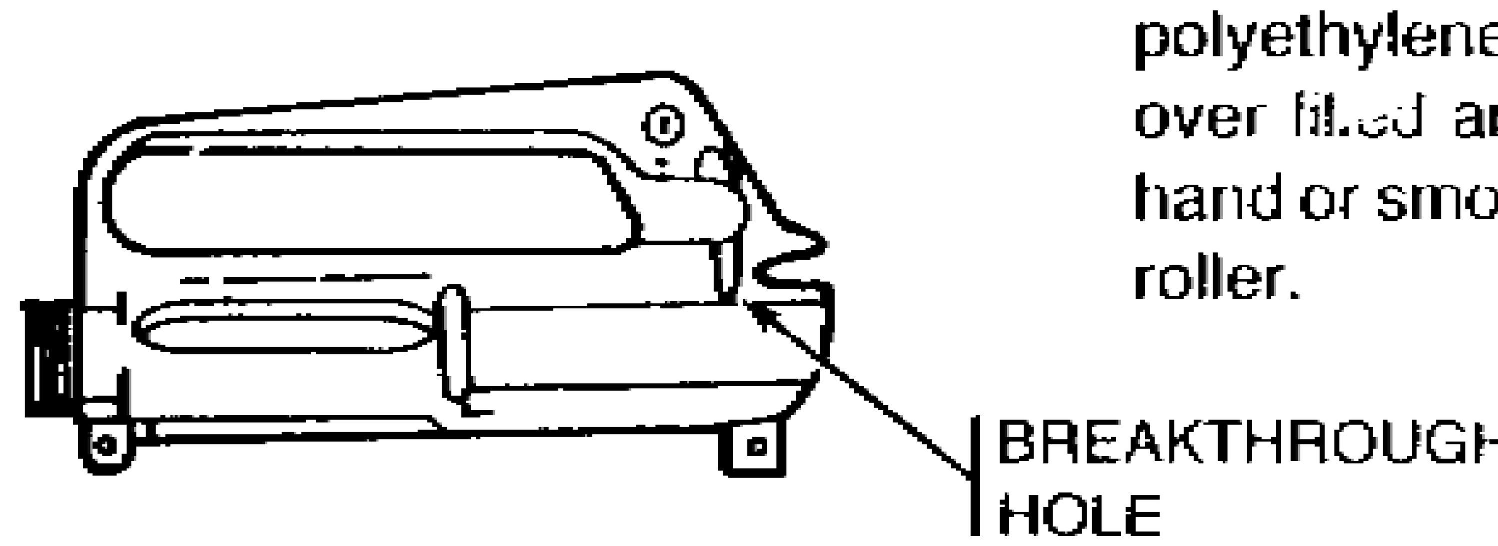
A - SHINY SURFACES
(REPARABLE)



B - CORRODED
(REPARABLE)



C - CORRODED
(NONREPARABLE)



D - BREAKTHROUGH HOLE
(ACCEPTABLE)

3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

INSPECTION/CLEANING (CONT)

After curing, remove polyethylene sheet in accordance with instructions by the manufacturer.

WARNING

When using solid film lubricant or dichloromethane, be sure the area is well ventilated.

CAUTION

Solid film lubricant (item 13, app D) is to be used only as an exterior surface protective finish and touch up. If solid film lubricant comes in contact with recoiling parts or functional surfaces of the rifle, remove immediately by washing with technical dichloromethane (item 8, app D).

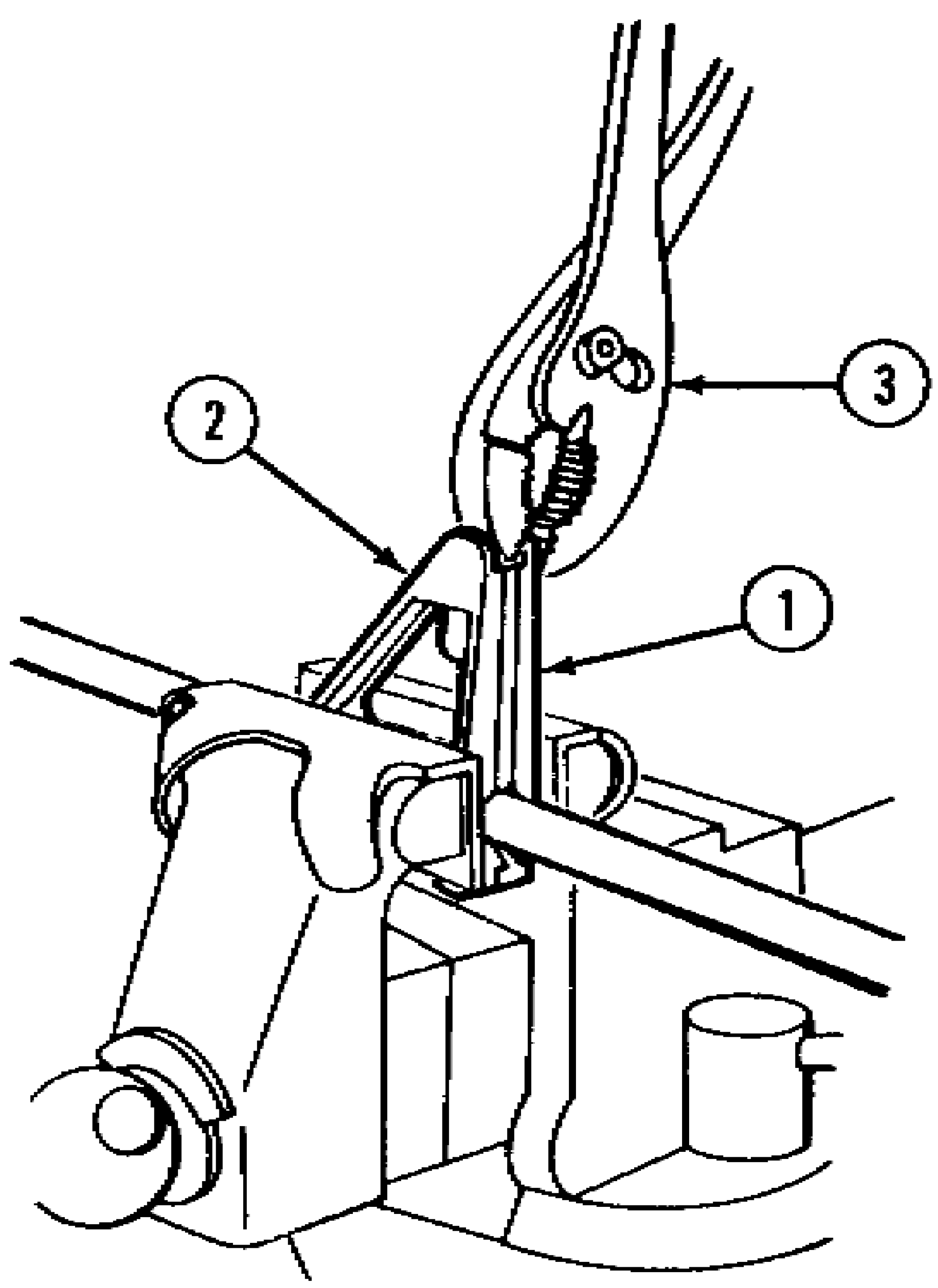
Wash area with technical dichloromethane (item 8, app D) (methylenechloride) to remove all dirt, grease, and foreign material.

Roughen area to be refinished with abrasive and clean surface again. Do not touch the area with fingers.

LOCATION	ITEM	ACTION	REMARKS
		Repair shiny surfaces.	Spray a coat of solid film lubricant (item 13, app D) in accordance with instructions supplied by the manufacturer. Dry 24 hours before handling.
	e. All parts	Inspect for damage and wear.	
		Replace all defective parts.	

REPAIR

LOCATION	ITEM	ACTION	REMARKS
Upper Receiver and Barrel Assembly	a. All authorized items.	Replace if unserviceable.	
	b. Front sight guards	Place front sight base (1) in a bench vise.	Use copper or brass caps (jaw inserts) on vise to prevent damage to sight base during clamping.
		Remove front sight post, plunger, and spring.	(See page 2-33.) Remove spring before heating. (Heat will damage spring.) The sight post and plunger may be reused unless damaged.
		Heat sight guard (2) and bend with pliers (3).	The sight guard (2) can be put back as nearly as possible to the original position.



WARNING

Dry cleaning solvent is flammable and toxic and should be used in a well-ventilated area. The use of rubber gloves is necessary to protect the skin when washing rifle parts.

LOCATION	ITEM	ACTION	REMARKS
		Roughen surface with abrasive cloth (item 6, app D) and clean with dry cleaning solvent (item 9, app D). Wear rubber gloves (item 10A, app D) and use wash pan (item 13A, app D) to apply solvent.	Allow front sight housing to air cool.

CAUTION

Do not allow solid film lubricant to flow into front sight post threaded well.

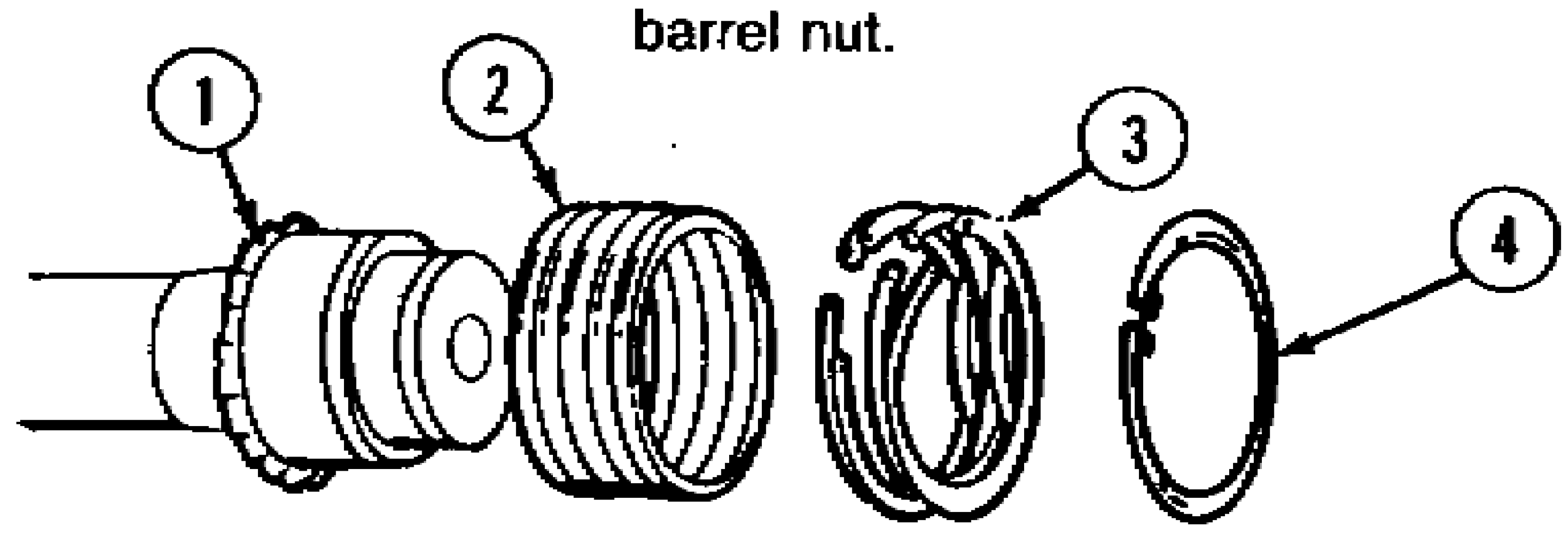
LOCATION	ITEM	ACTION	REMARKS
		Apply solid film lubricant (item 13, app D) to cover the damaged finish.	

3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

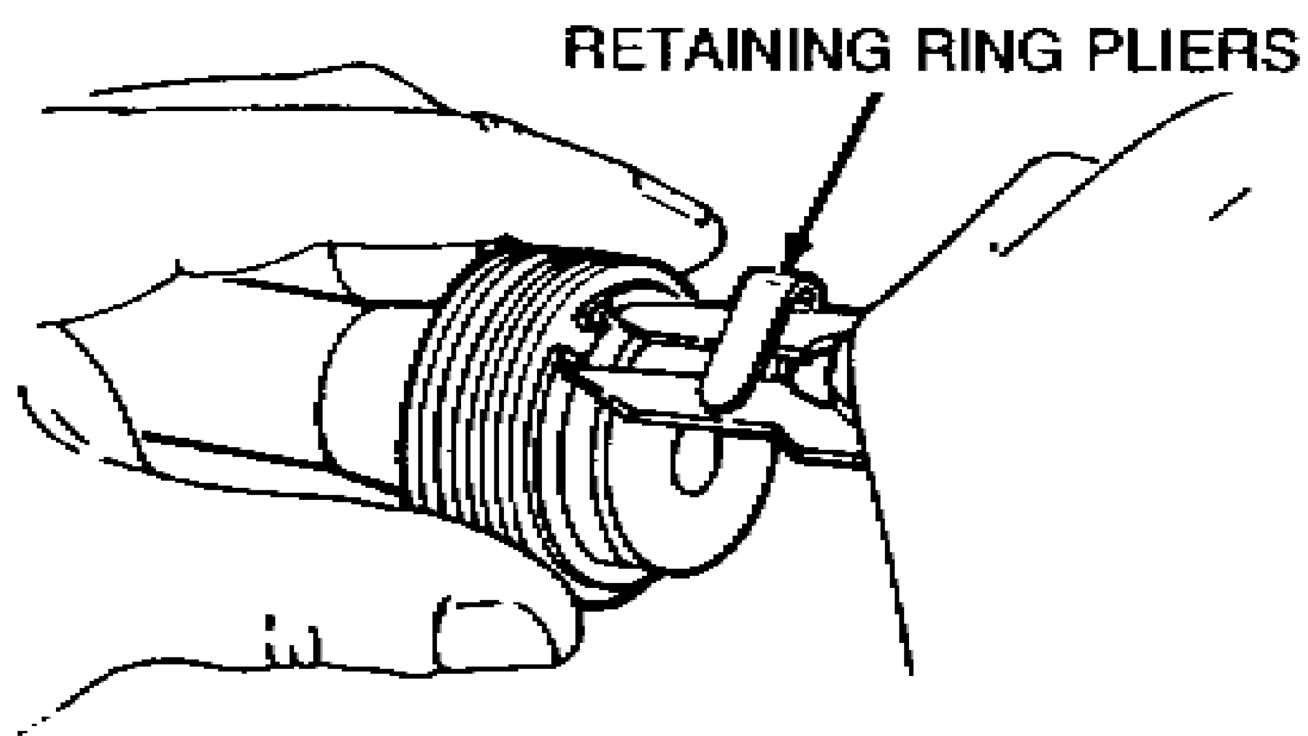
LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
1 Barrel Nut Assembly and Rifle Barrel Assembly	a. Barrel nut (1)	Position barrel nut (1) on barrel.	Slide barrel nut to the rear of barrel as far as possible.
	b. Handguard slip ring (2)	Slide handguard slip ring over barrel nut.	



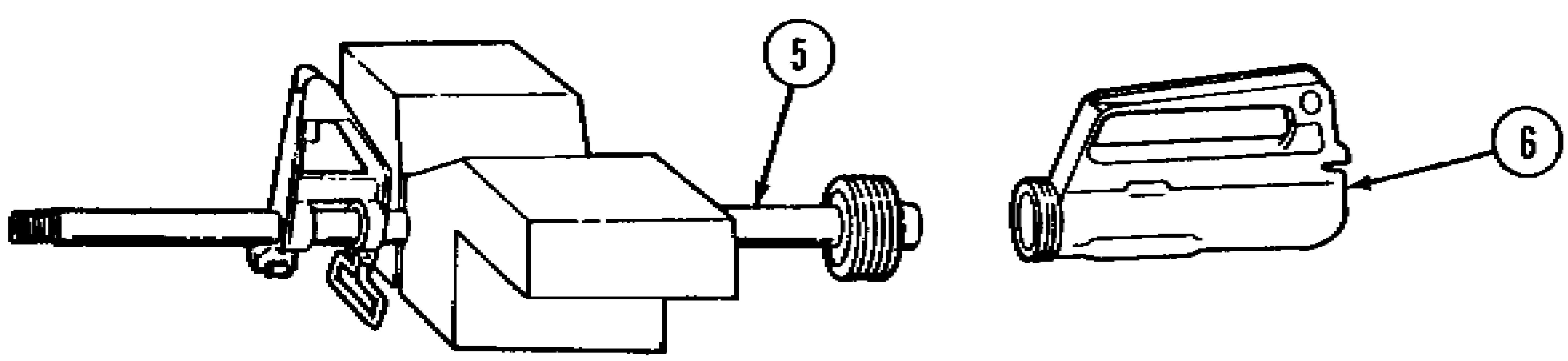
LOCATION	ITEM	ACTION	REMARKS
	c. Slip ring spring (3)	Press in from both sides and insert slip ring spring into handguard slip ring.	
	d. Retaining ring (4)	Install against slip ring spring using retaining ring pliers. Snap retaining ring to barrel nut.	



NOTE

Apply molybdenum disulfide grease (item 11, app D) to threads of barrel nut assembly before installation.

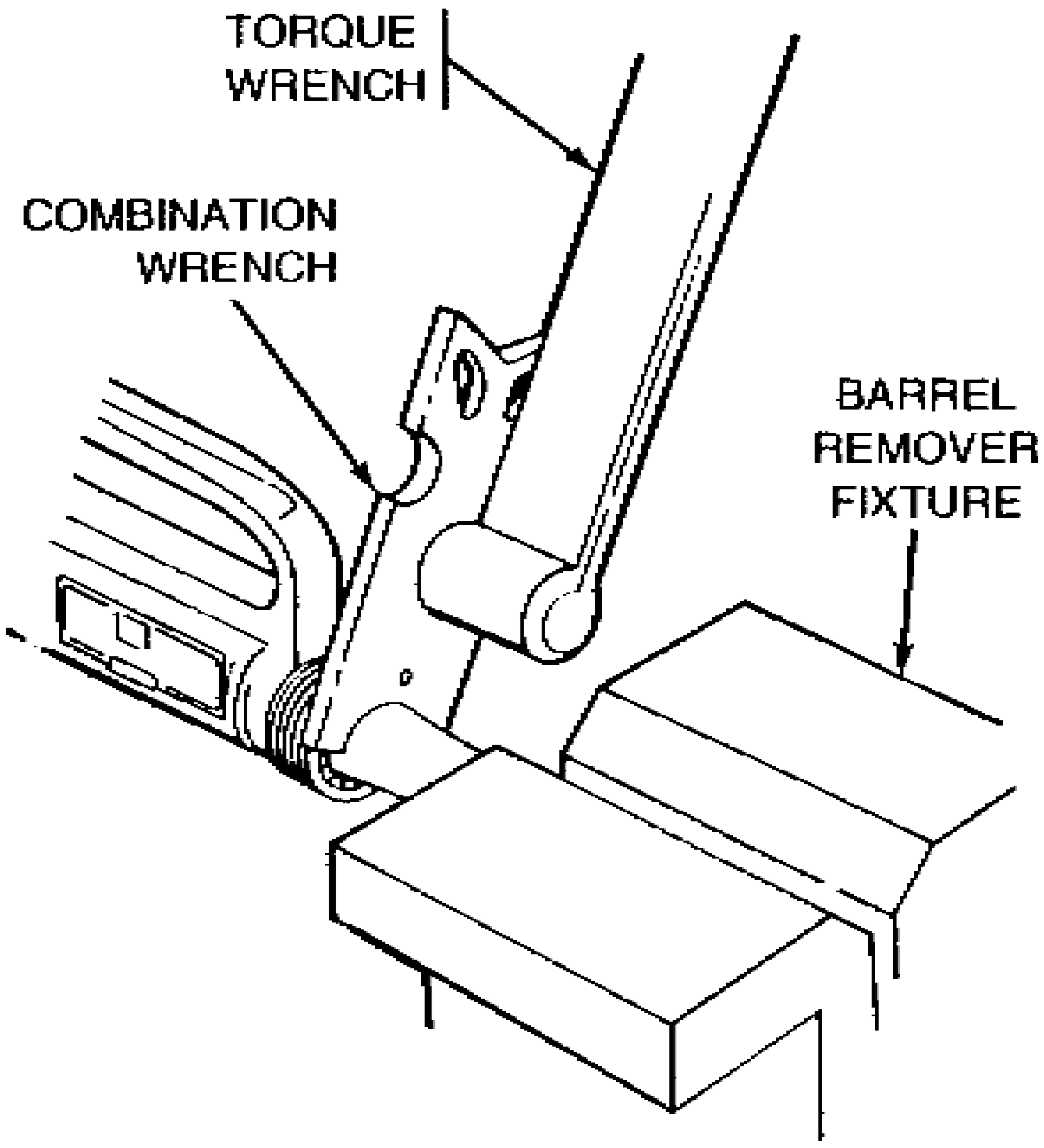
LOCATION	ITEM	ACTION	REMARKS
2 Upper Receiver and Barrel Assembly	a. Rifle barrel assembly (5)	Position rifle barrel with alinement pin up. Using barrel remover fixture, clamp barrel in vise.	



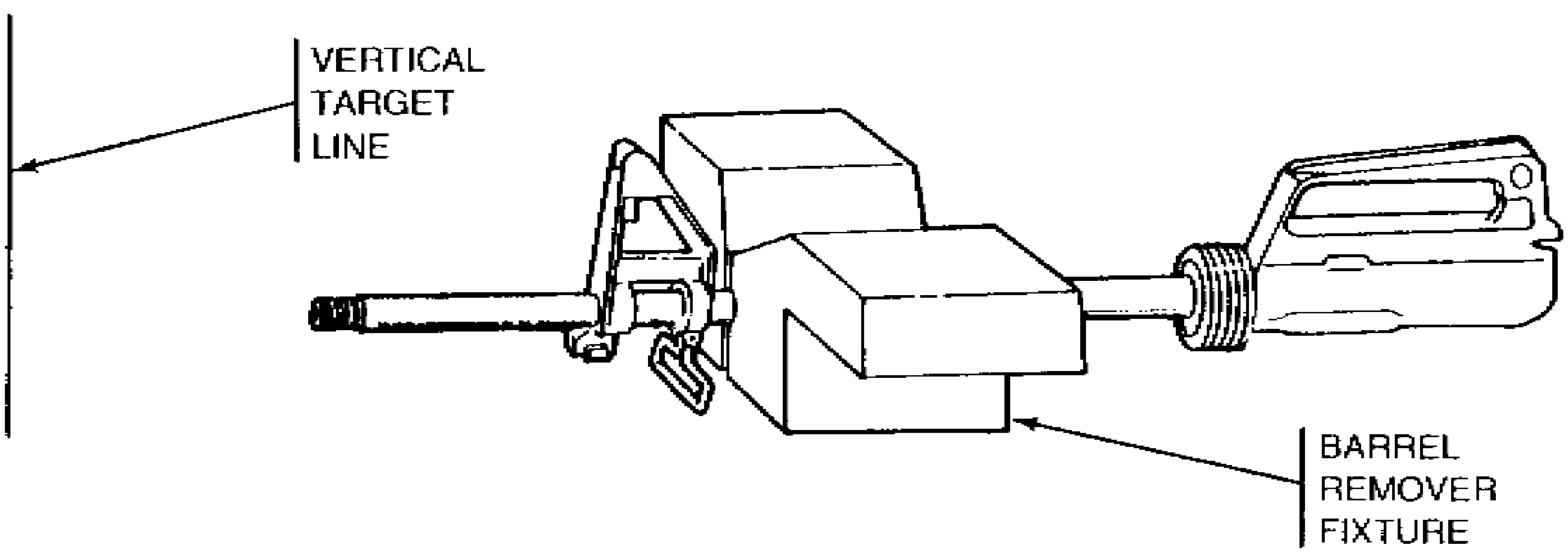
LOCATION	ITEM	ACTION	REMARKS
	b. Upper receiver assembly (6)	Aline upper receiver assembly using barrel alinement pin and the slot in upper receiver assembly. Install over end of barrel.	

NOTE

Wipe upper receiver thread clean and ensure there are no burrs. Apply molybdenum disulfide grease (item 11, app D) to the threads prior to installation.



ACTION	REMARKS
Engage threads of barrel nut assembly with upper receiver assembly.	Two time torquing (three times total) procedures provide for a better thread fit and prevents barrel nuts from becoming loose.
Using combination wrench and torque wrench, torque barrel nut assembly to 35 ft-lb. Torque is measured when both wrenches are used together.	
Make certain all three drive pins on combination wrench are engaged with barrel nut assembly. Loosen and repeat torque operation. Then loosen the barrel nut again.	Do not use the torque wrench for loosening.
Loosen the vise and aline the front sight base in a vertical position (use a vertical line on the wall to check this) then tighten vise to hold the barrel assembly in that position.	



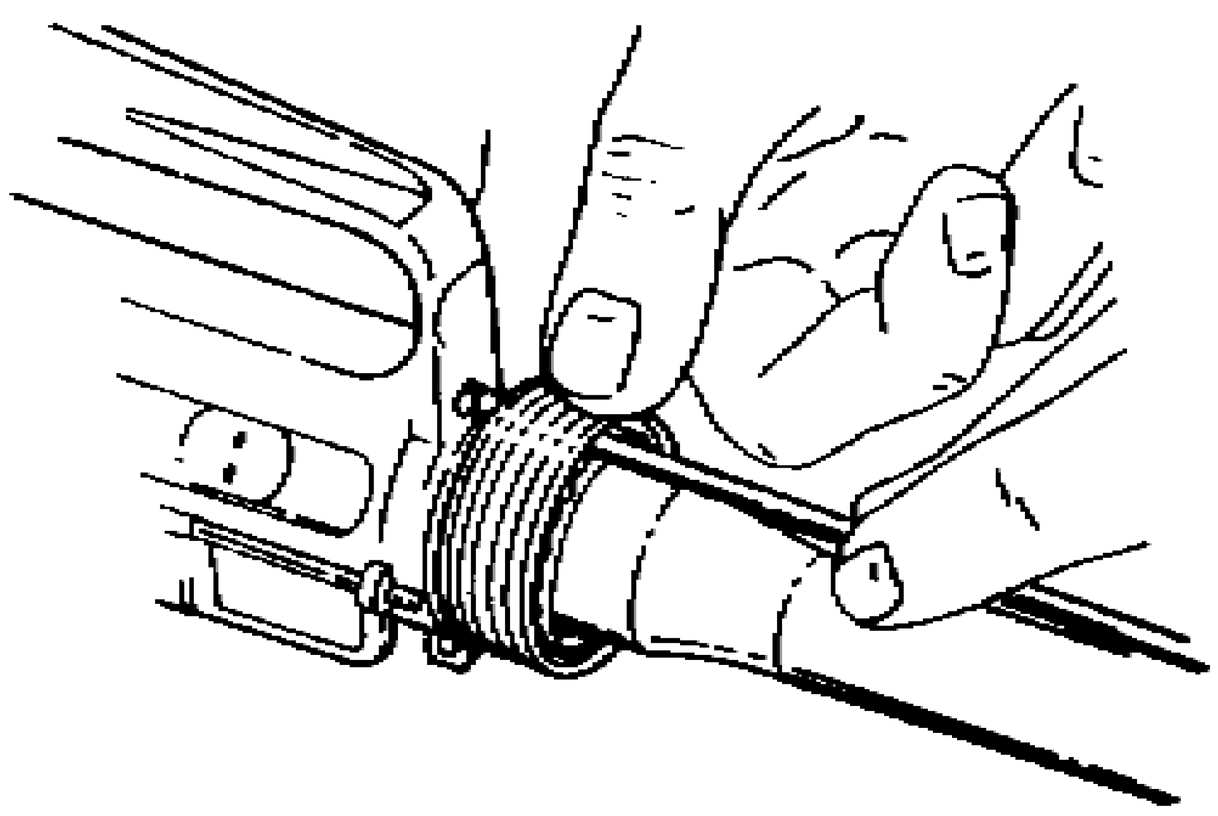
3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

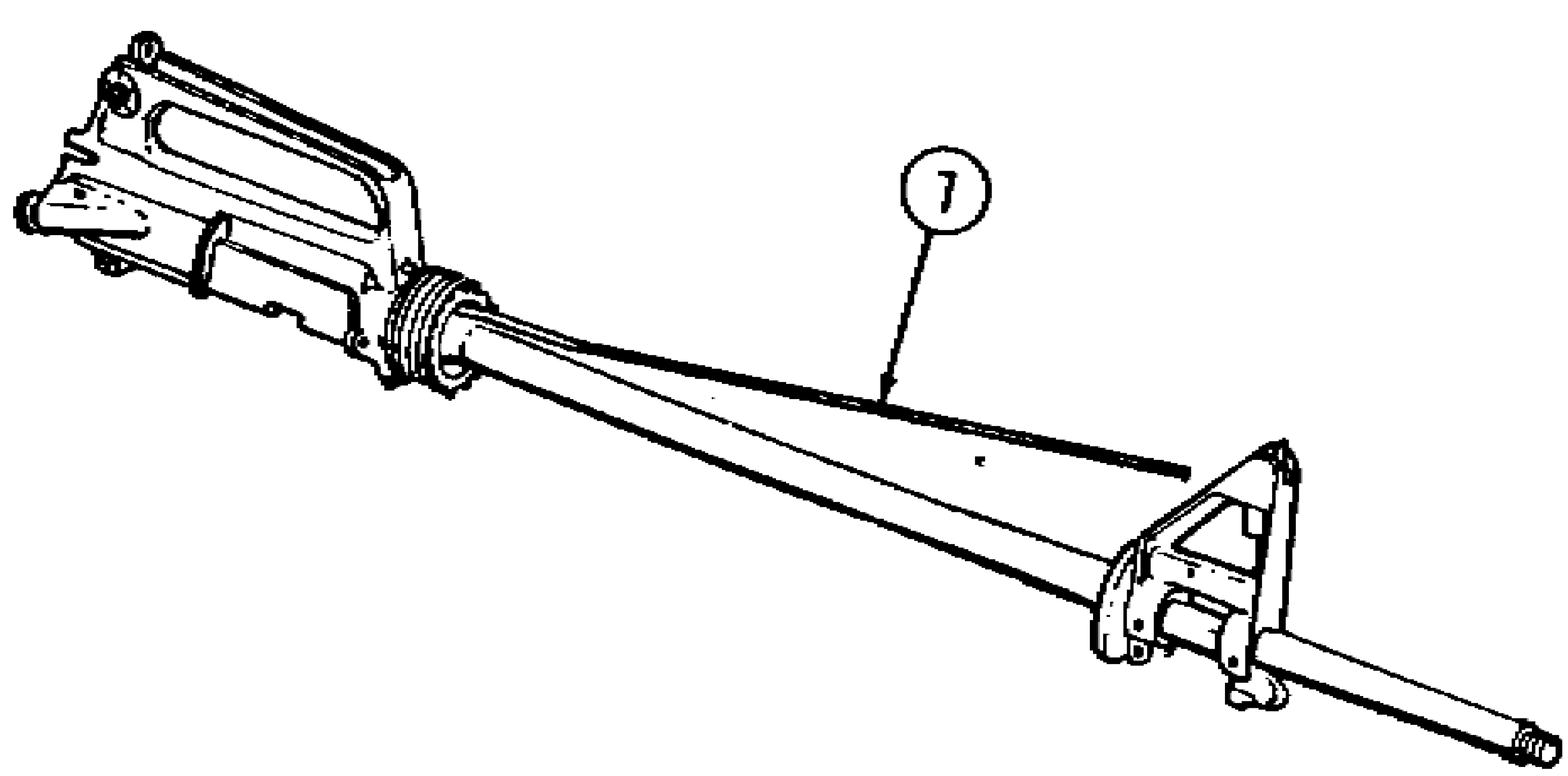
REASSEMBLY (CONT)

NOTE

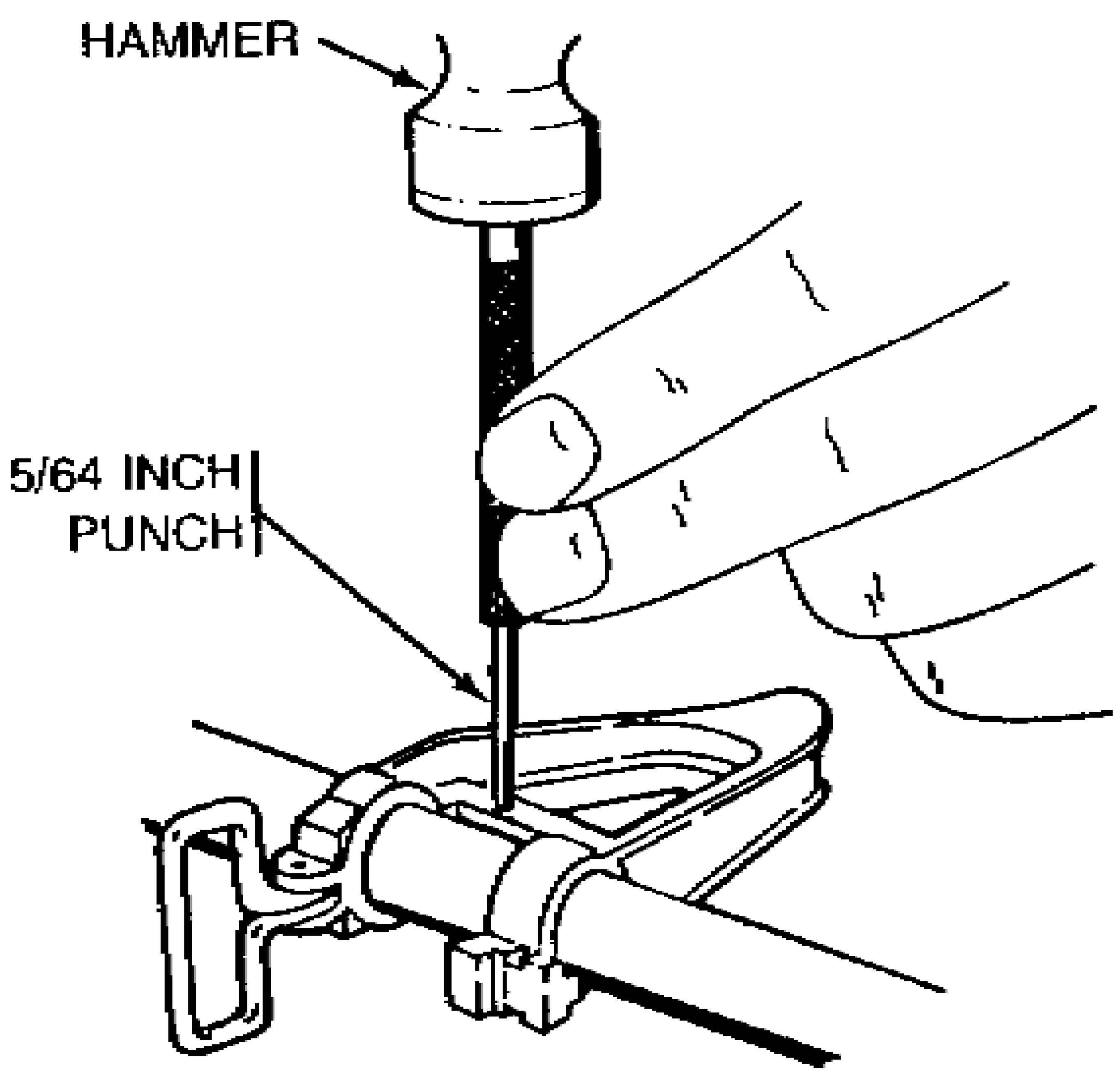
Upper receiver and barrel assembly may be equipped with low light level front and rear sights. The front and rear sights must be removed and standard sights reinstalled before shipping.



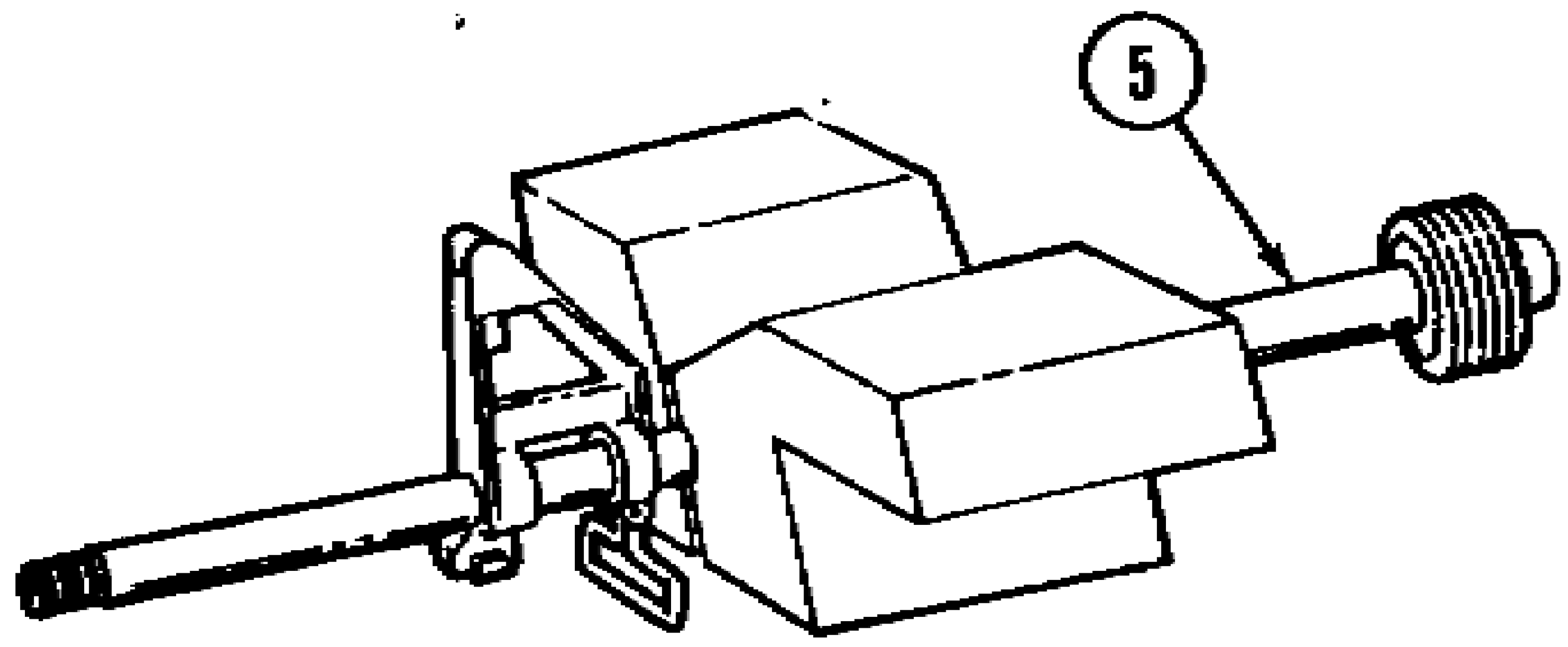
LOCATION	ITEM	ACTION	REMARKS
		With aperture centered, view from the rear and rotate the upper receiver right or left to aline rear sight to the same vertical line. Torque the barrel nut again to 35 ft-lb while maintaining sight alinement. The barrel nut will be tightened beyond 35 ft-lb to aline the barrel nut serrations for gas tube clearance. Never loosen the barrel nut to aline for gas tube clearance.	Do not attempt to hold the upper receiver with a pry bar; however, if the barrel turns in the holding fixture, a pry bar may be used in the front sight base to help prevent the barrel from turning in the holding fixture. Use care not to distort or bend front sight or retaining pins.
		Aline barrel nut assembly with upper receiver assembly using 1/8 inch drive pin punch.	
		If necessary, tighten nut to next hole to allow proper alinement. Remove drive pin punch from receiver. Remove upper receiver and barrel assembly from barrel remover fixture.	
	c. Gas tube (7)	Install.	Slide gas tube (7) through the barrel nut assembly and then slide forward inserting gas tube into hole in the front sight assembly.



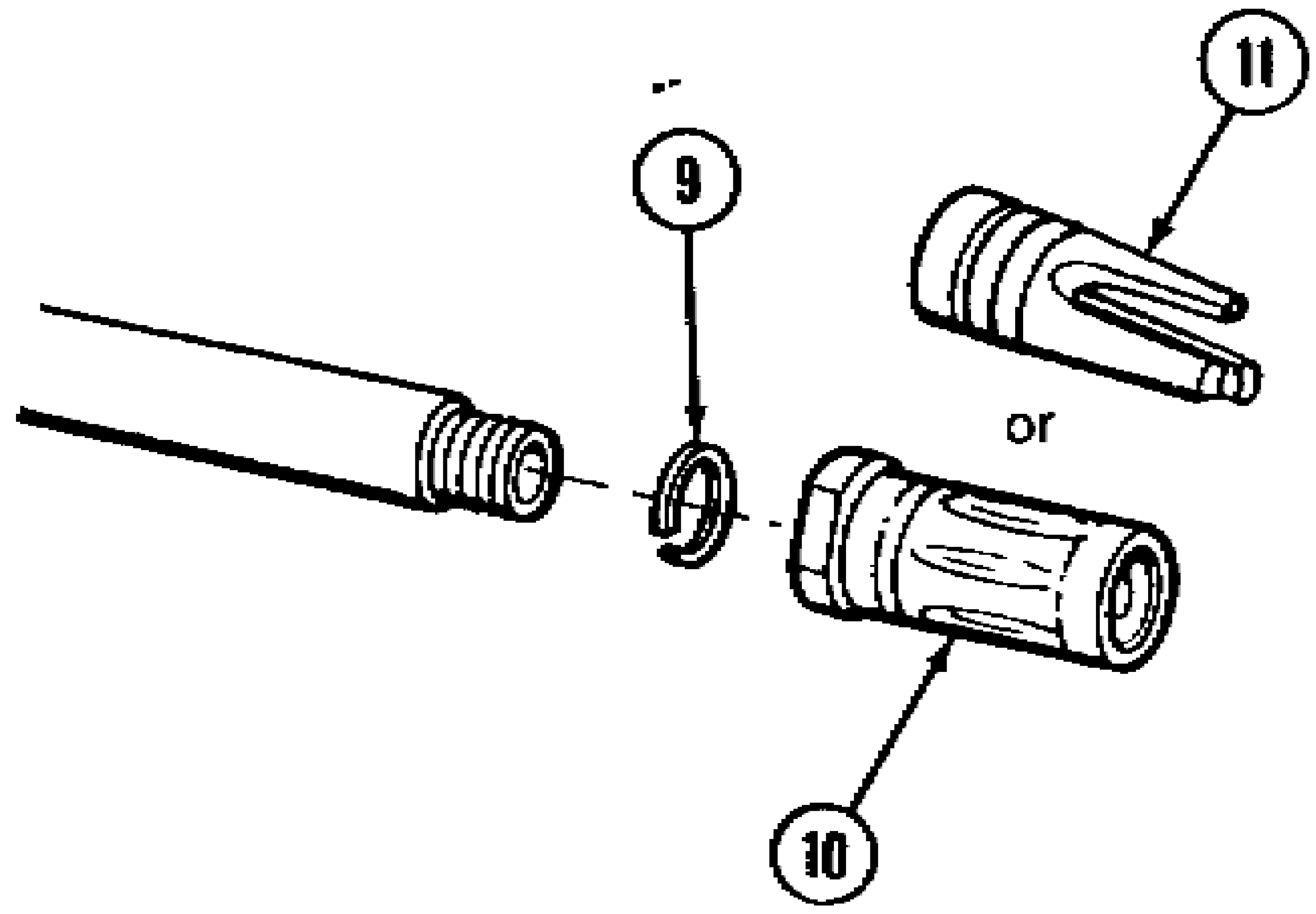
LOCATION	ITEM	ACTION	REMARKS
	d. Spring pin (8)	Install. Aline the holes in gas tube and sight. Using ball peen hammer and 5/64-inch diameter drive pin punch, drive spring pin into front sight assembly to secure gas tube.	



	e. Rifle barrel assembly (5)	Install barrel assembly into barrel remover fixture and vise.	



	f. Lock washer (9) and flash suppressor (10 or 11)	Install on barrel.	

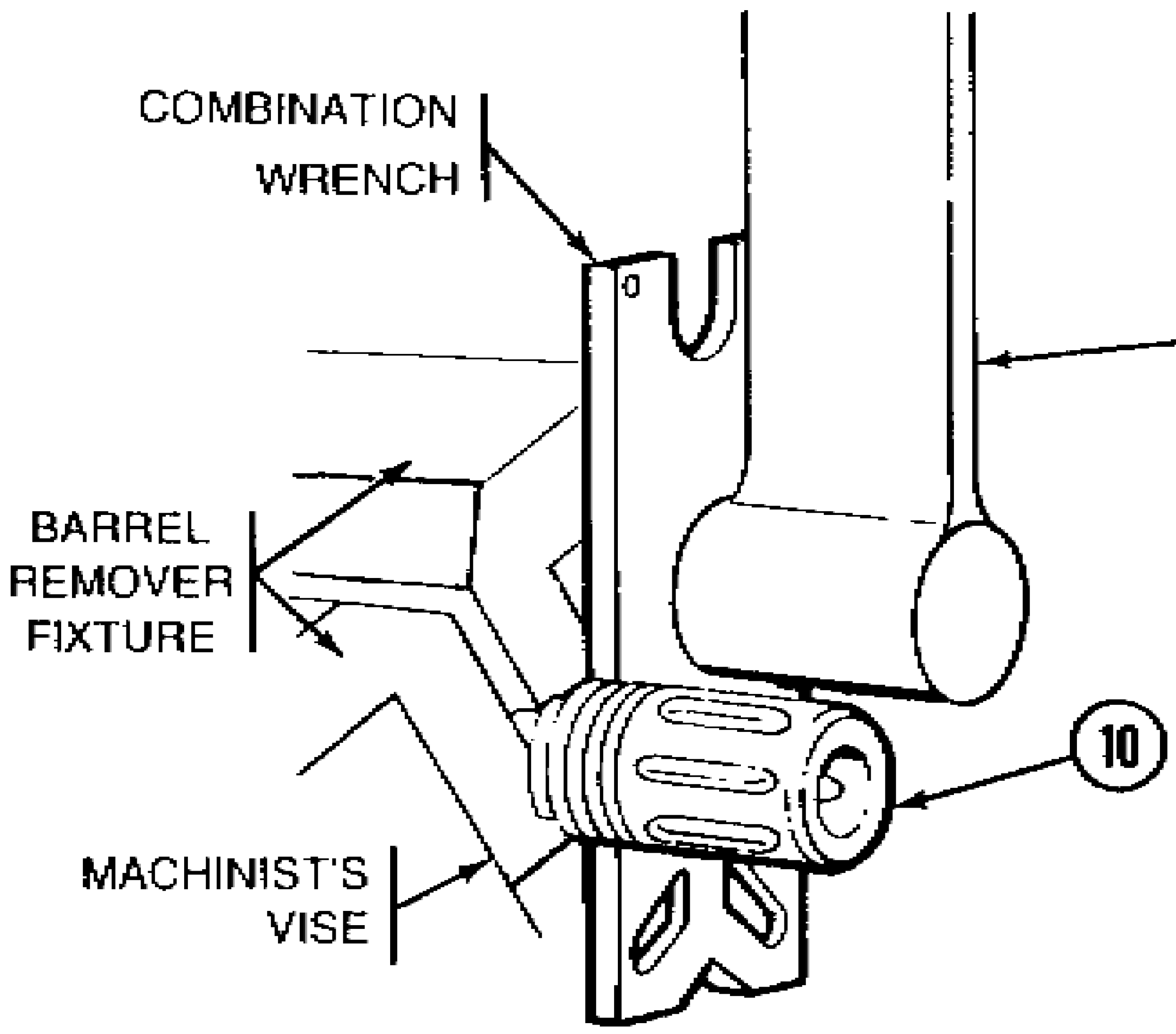


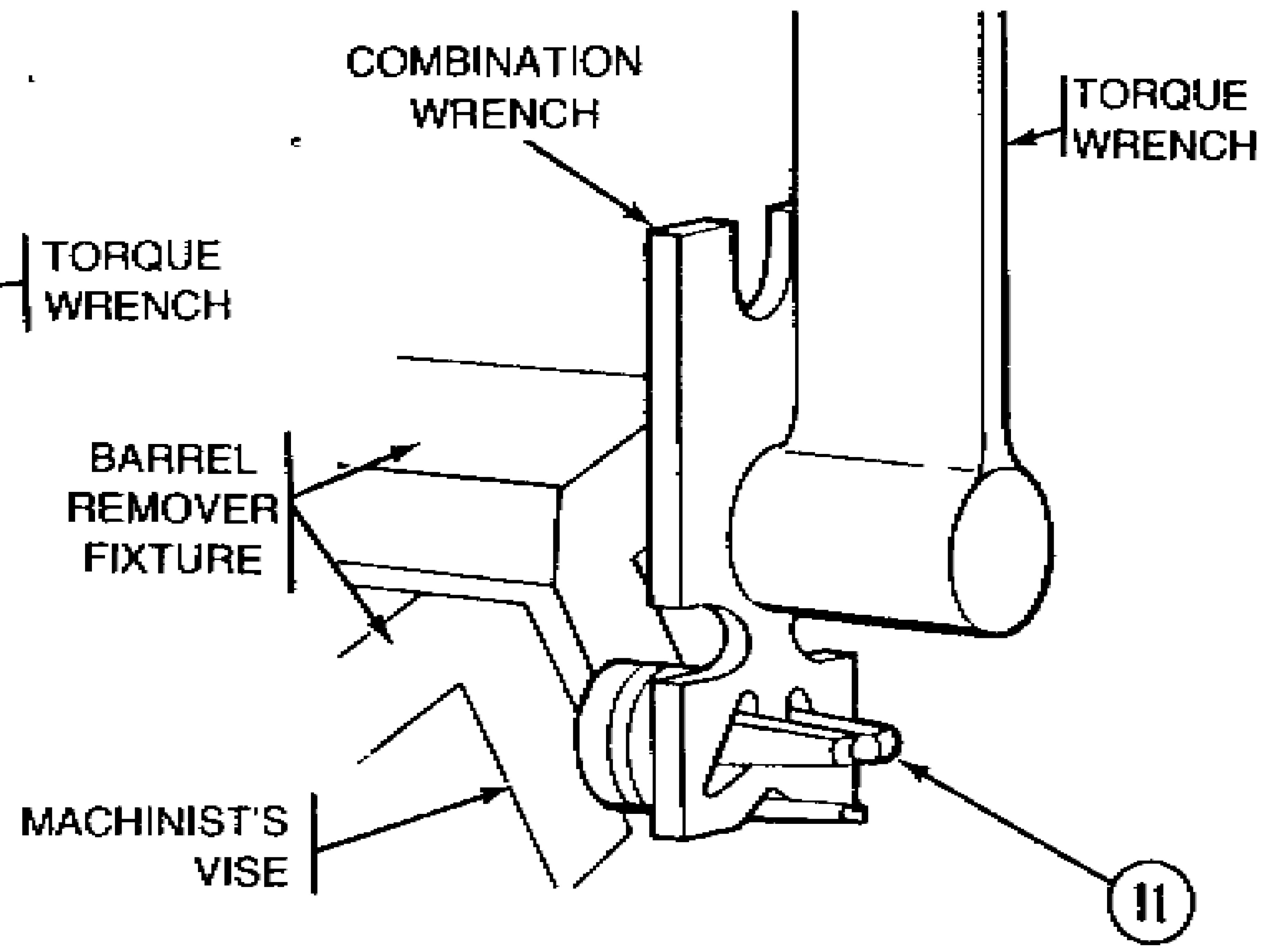
3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY (CONT)

Torque to 15-20 ft-lb using combination wrench and torque wrench. Torque is measured when both wrenches are used together.





TEST

LOCATION	ITEM	ACTION	REMARKS
1	Upper receiver and barrel assembly	Determine type of bore and chamber under test using applicable gages.	

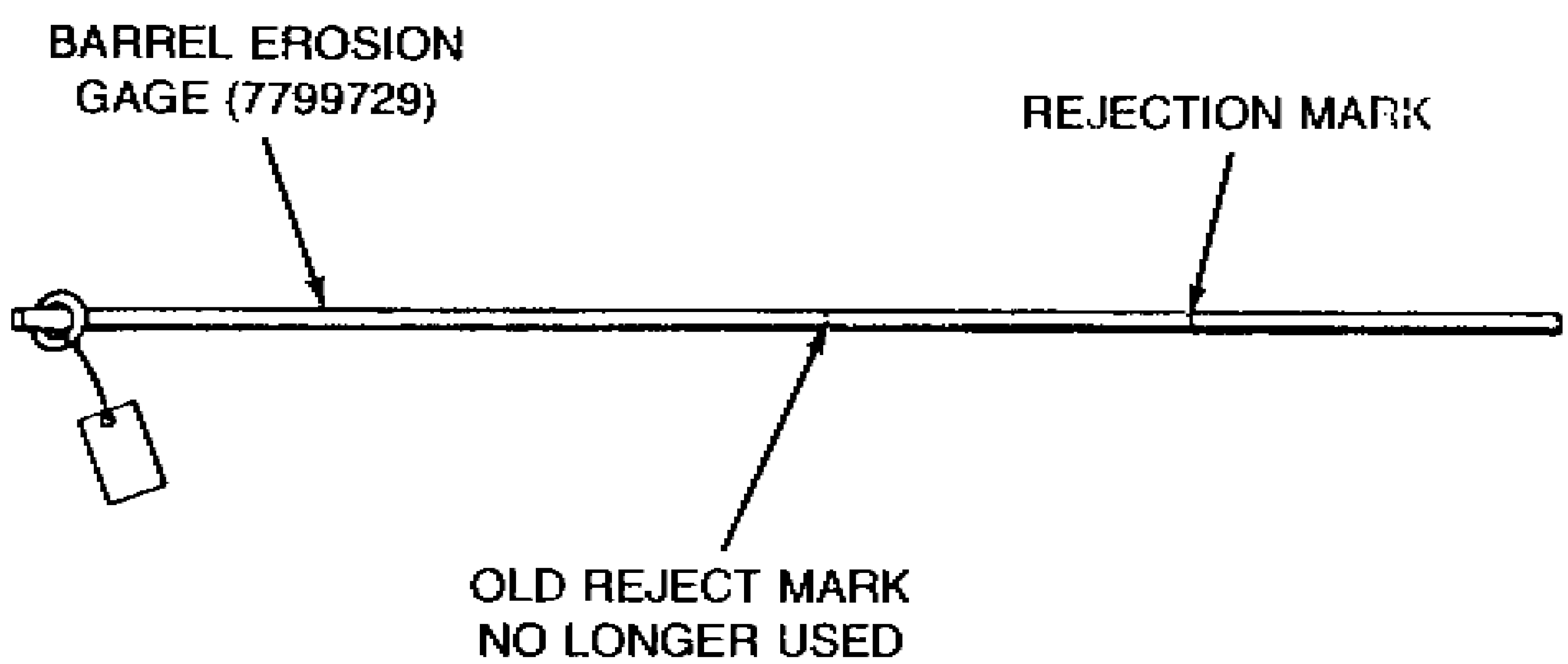
NOTE

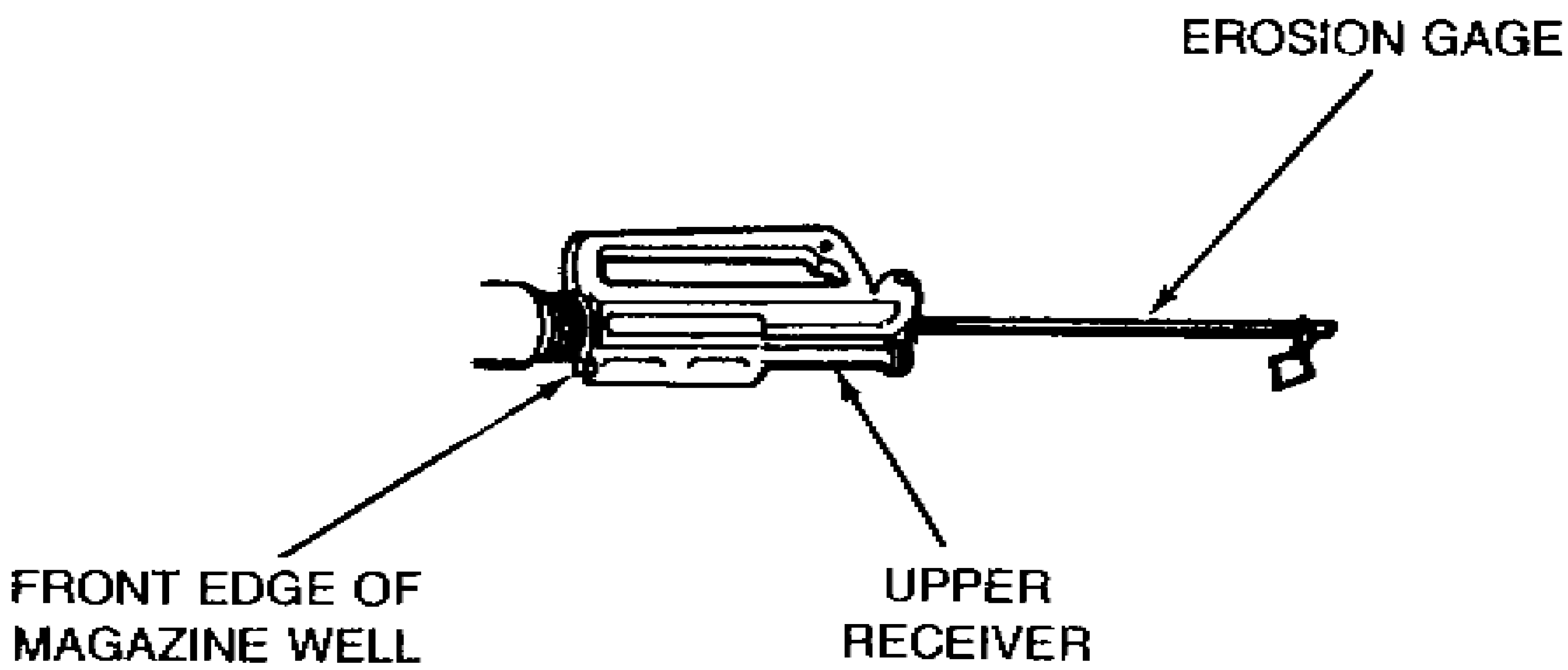
1. The following information pertaining to the use of breech bore and other gages is required for subject TM:
   a. Barrel erosion gage P/N 7799792 is to be used to check barrels that are not chromed. Instructions for its use are on the tag attached to the gage. The first line from the end of the gage is the reject line. The second line is no longer used.
   b. Barrel erosion gage P/N 8448496 is to be used only on fully chromed barrels. Instructions for its use are on the tag attached to the gage.

LOCATION	ITEM	ACTION	REMARKS

2. The following is how to identify chromed barrels from unchromed barrels. Stampings on the barrel approximately one inch rearward from the flash suppressor are as follows:
   a. (SAK MP C) SAK is the manufacturer's stamp, MP indicates magnetic partical inspection, C indicates chrome chamber only, or (C MP C) C = Colt Manufacturer, MP = magnetic partical inspection, and C = chrome chamber only.
   b. Other markings which indicate chrome chamber only are "C" alone or "RUC" or "RNC" alone. A "C" stamped on the barrel between the rings of the front sight base also indicates chromed chamber only.
   c. Markings the same as in a. above with the last letter "B" indicate a fully chromed bore and chamber.
   d. Other markings such as "CB" alone indicate a fully chromed chamber and bore.
   e. The latest configuration is identified with the words "Chrome Bore" written out.
3. The muzzle erosion gage, P/N 8448677, is used on the unchromed barrel only. It is not required for use on chromed bore barrels. Instructions on its use are on the tag attached to the gage.
4. The bore straightness gage, P/N 8448202, is required for use on all barrels. The gage must pass through the barrel without force.

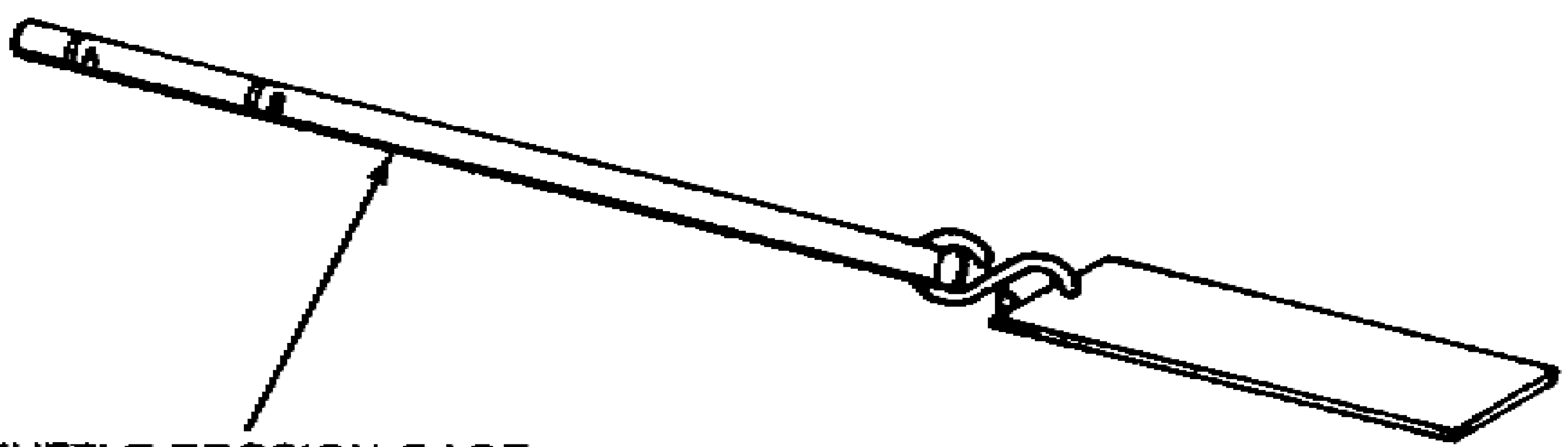
LOCATION	ITEM	ACTION	REMARKS
2 Upper Receiver and Barrel Assembly (M16 and M16A1)	a. Barrel (UNCHROMED)	Insert barrel erosion gage (7799729) into breech. Gage must not go beyond rejection mark when viewed from front edge of magazine well in receiver.	If barrel erosion gage goes past the rejection mark, the barrel is unserviceable.

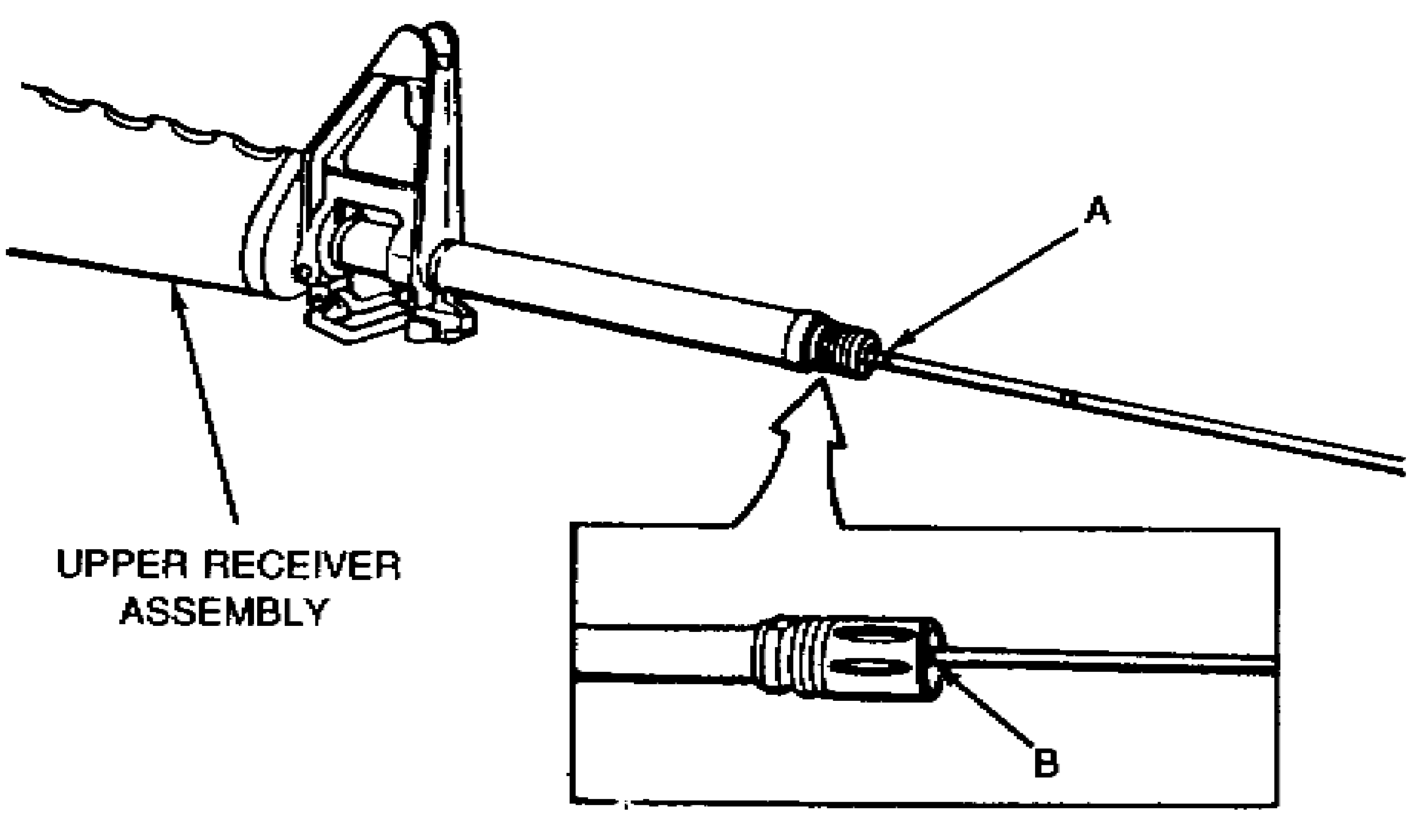




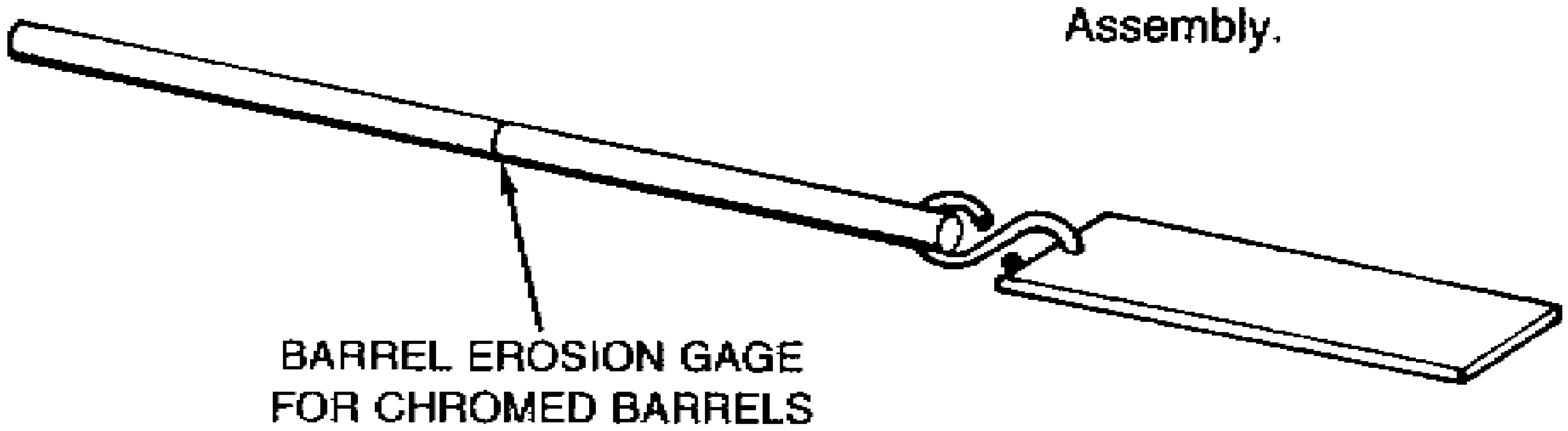
3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

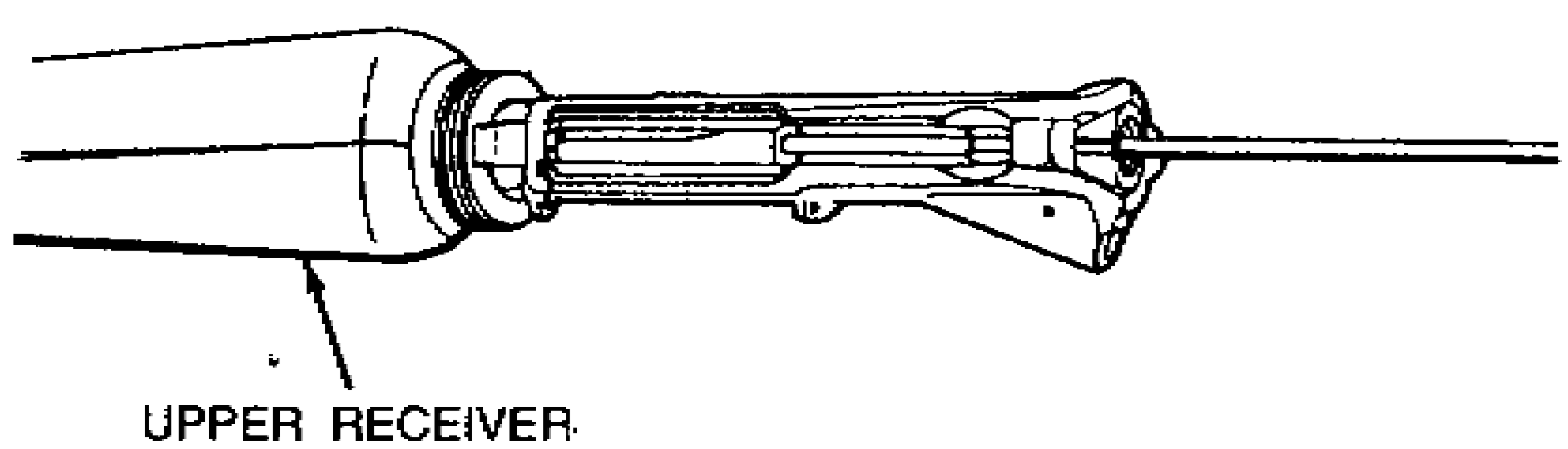
LOCATION	ITEM	ACTION	REMARKS
TEST (CONT)			
	b. Muzzle erosion gage (NONCHROMED BARREL ONLY)	Insert muzzle erosion gage into muzzle. Gage must not go beyond applicable rejection mark.	There are two rejection marks, "A" and "B." Use rejection mark "A" when the barrel is being gaged without the flash suppressor assembled. Use rejection mark "B" when the barrel is being gaged with the flash suppressor installed. If muzzle erosion gage goes past the applicable rejection mark, the barrel is unserviceable.



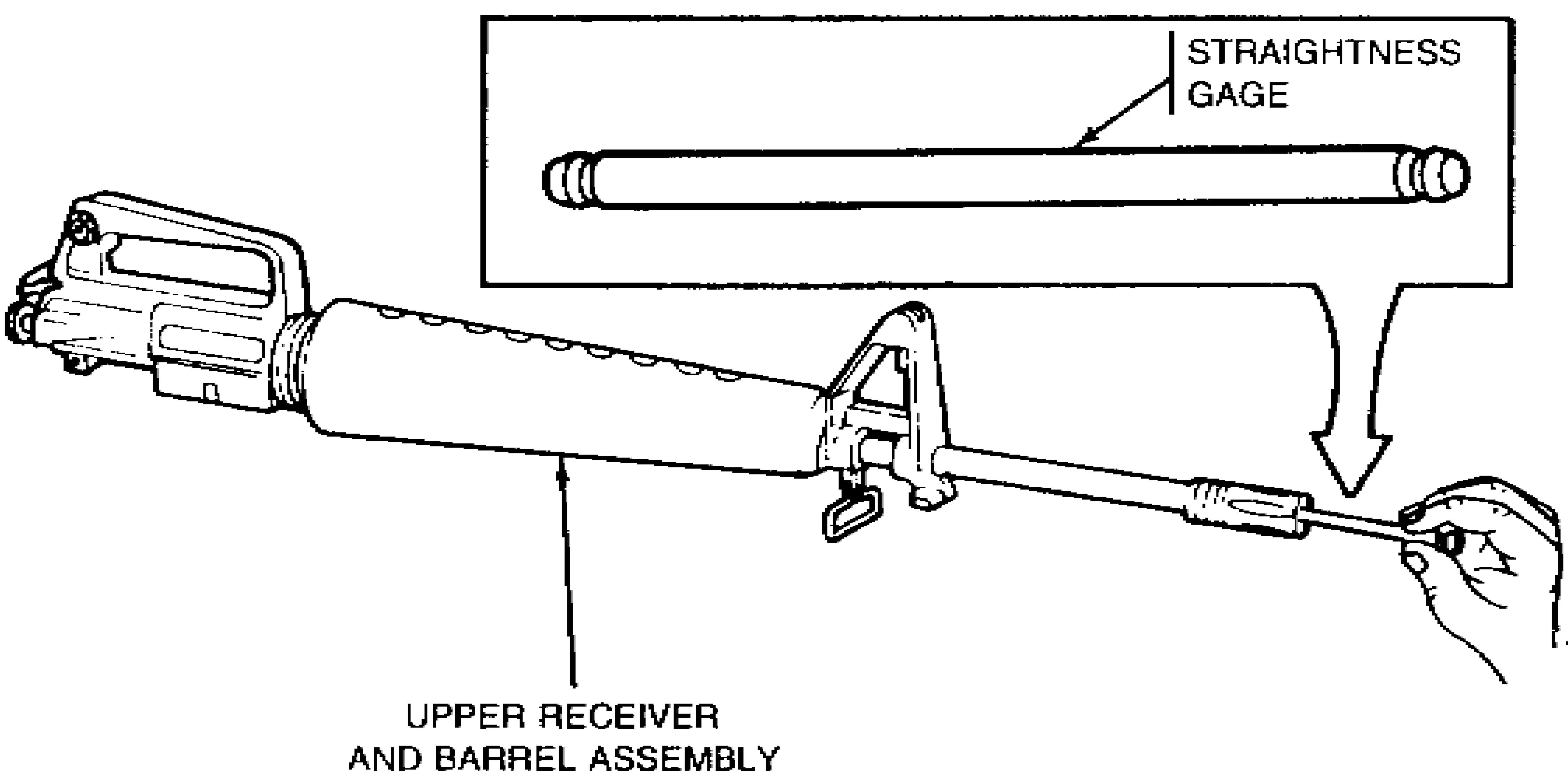


LOCATION	ITEM	ACTION	REMARKS
	c. Barrel (CHROMED)	For chrome barrel, use barrel erosion gage 8448496 and install bolt carri[illegible]and key assembly with bolt assembly and firing pin removed. Insert gage into rear of Key and Bolt Carrier Assembly. The reject line must be read at the rear edge of the Key and Bolt Carrier Assembly.	If the reject mark passes beyond the rear surface of the bolt carrier assembly, the barrel is unserviceable and shall be replaced.





LOCATION	ITEM	ACTION	REMARKS
	d. Bore (CHROMED or NONCHROMED)	Check straightness using straightness gage 8448202. Put gage in barrel. Tilt barrel and allow gage to fall through.Catch gage.	Gage must pass freely through barrel. If the gage does not pass through the barrel, the barrel is defective and and must be replaced.

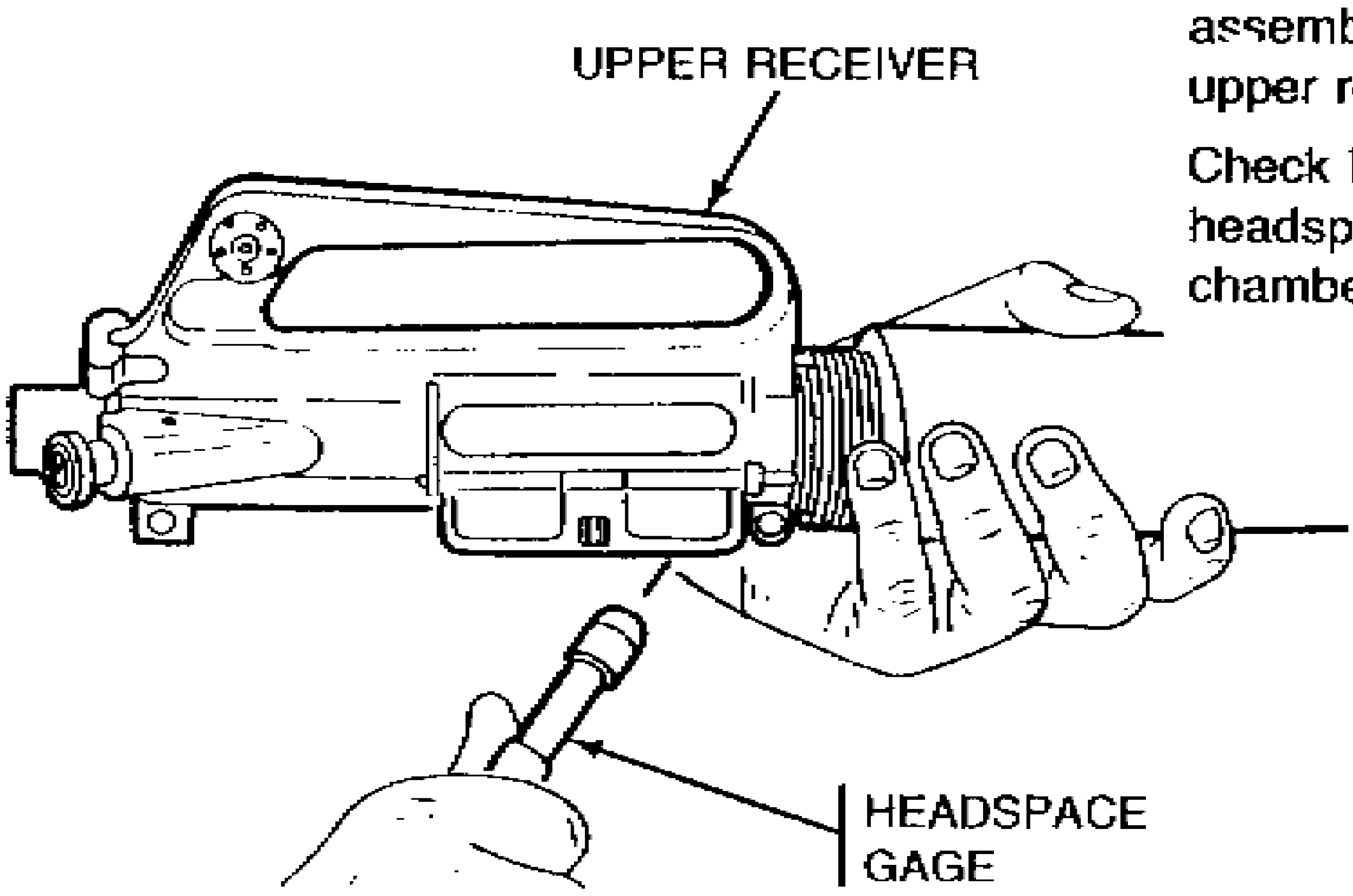


3-13. UPPER RECEIVER AND BARREL ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

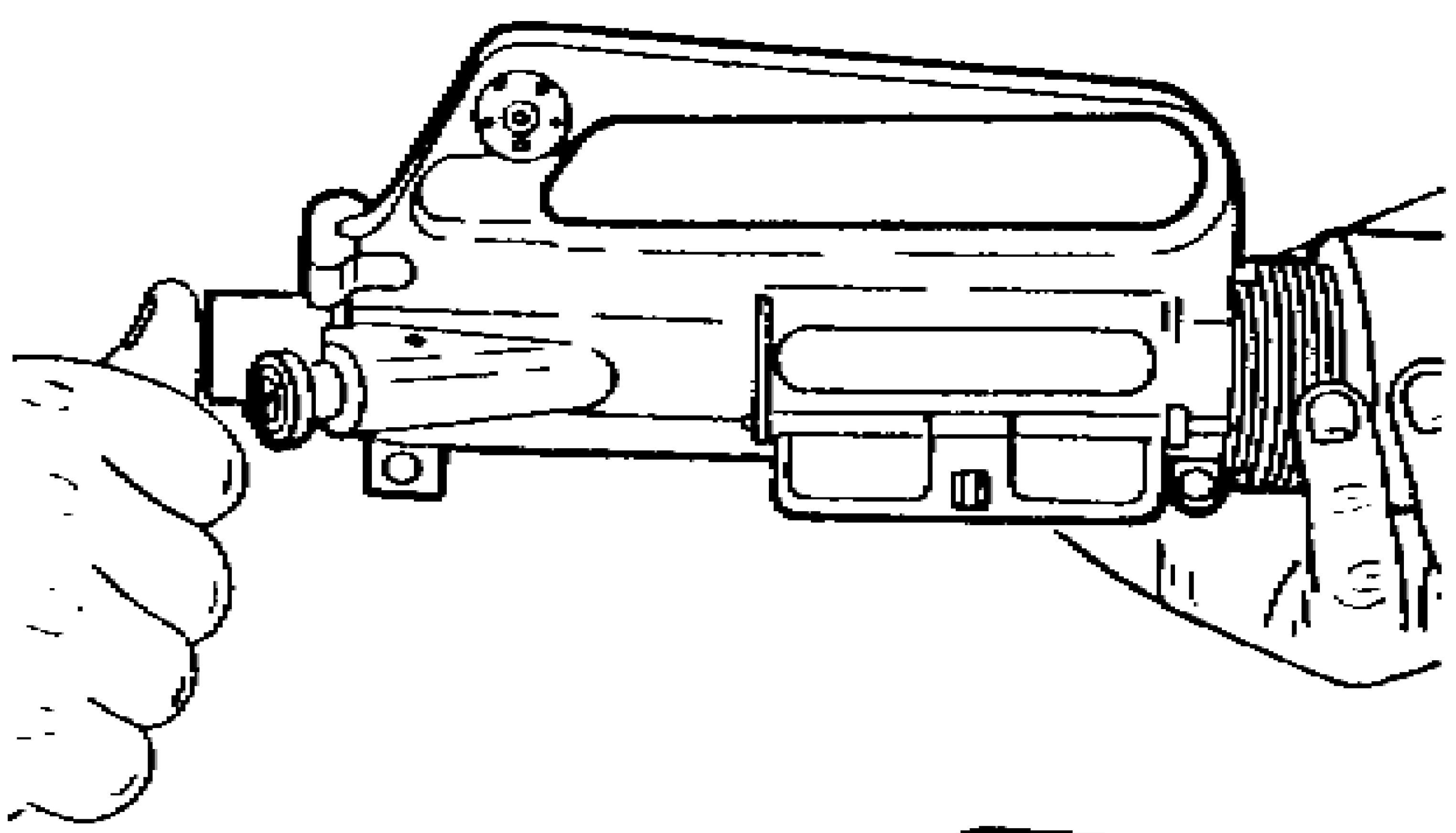
TEST (CONT)

e. Chamber



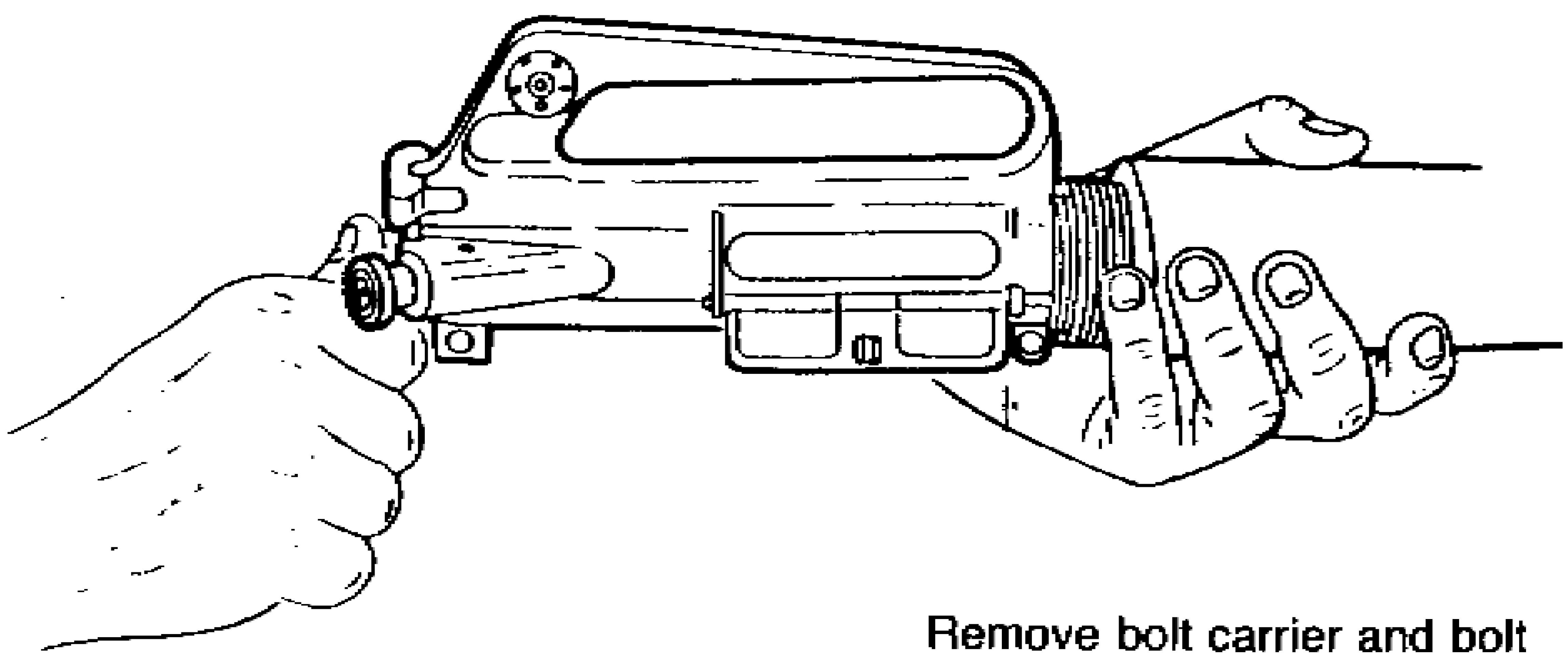
Assemble charging handle, bolt assembly, and bolt carrier into upper receiver.

Check headspace by inserting headspace gage 7799734 in chamber.



Press bolt carrier and bolt assembly and charging handle forward using light finger pressure.

Bolt carrier and bolt assembly must protrude from rear of receiver for proper headspace. If bolt carrier is flush with or indented to rear surface, this indicates excessive headspace. If excessive headspace, first replace bolt assembly and then recheck. If headspace is not corrected, replace barrel assembly; then recheck with the original bolt to determine if the bolt is still good or if the bolt should be replaced also.



Remove bolt carrier and bolt assembly and charging handle and headspace gage.

NOTE

Rifles which have been rebarreled must be function-fired with nine rounds of ball ammunition. After rebarreling, the rifle must be targeted with three rounds of ball ammunition at 25 meter range using target. Refer to TM 9-1005-249-10 and FM 23-9.

3-14. UPPER RECEIVER ASSEMBLY.

This task covers:
a. Disassembly
b. Inspection
c. Repair
d. Lubrication
e. Reassembly

INITIAL SETUP

Applicable Configuration
All M16/M16A1 rifles except as noted. The M16 rifles are not equipped with the forward assist assembly. The receivers are different part numbers but all other parts are interchangeable. Some rifles may be equipped with a low light level rear sight.

Tools
Small Arms Repairman Tool Kit SC 5180-95-CL-A07
Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)

Materials/Parts
Abrasive cloth (item 6, app D)
Solid film lubricant (item 13, app D)
Cleaner, lubricant and preservative (CLP) (item 5, app D)

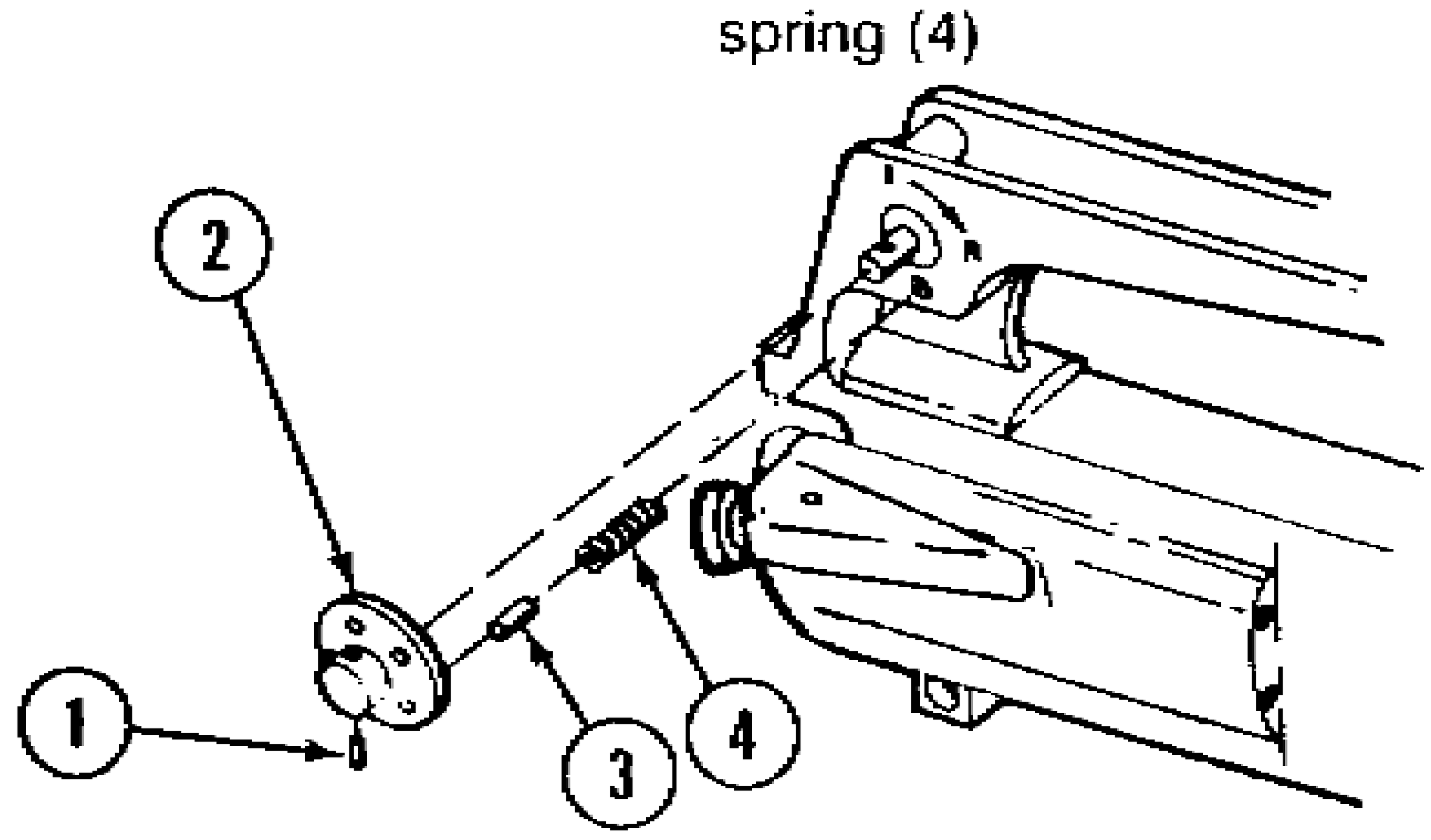
Equipment Condition

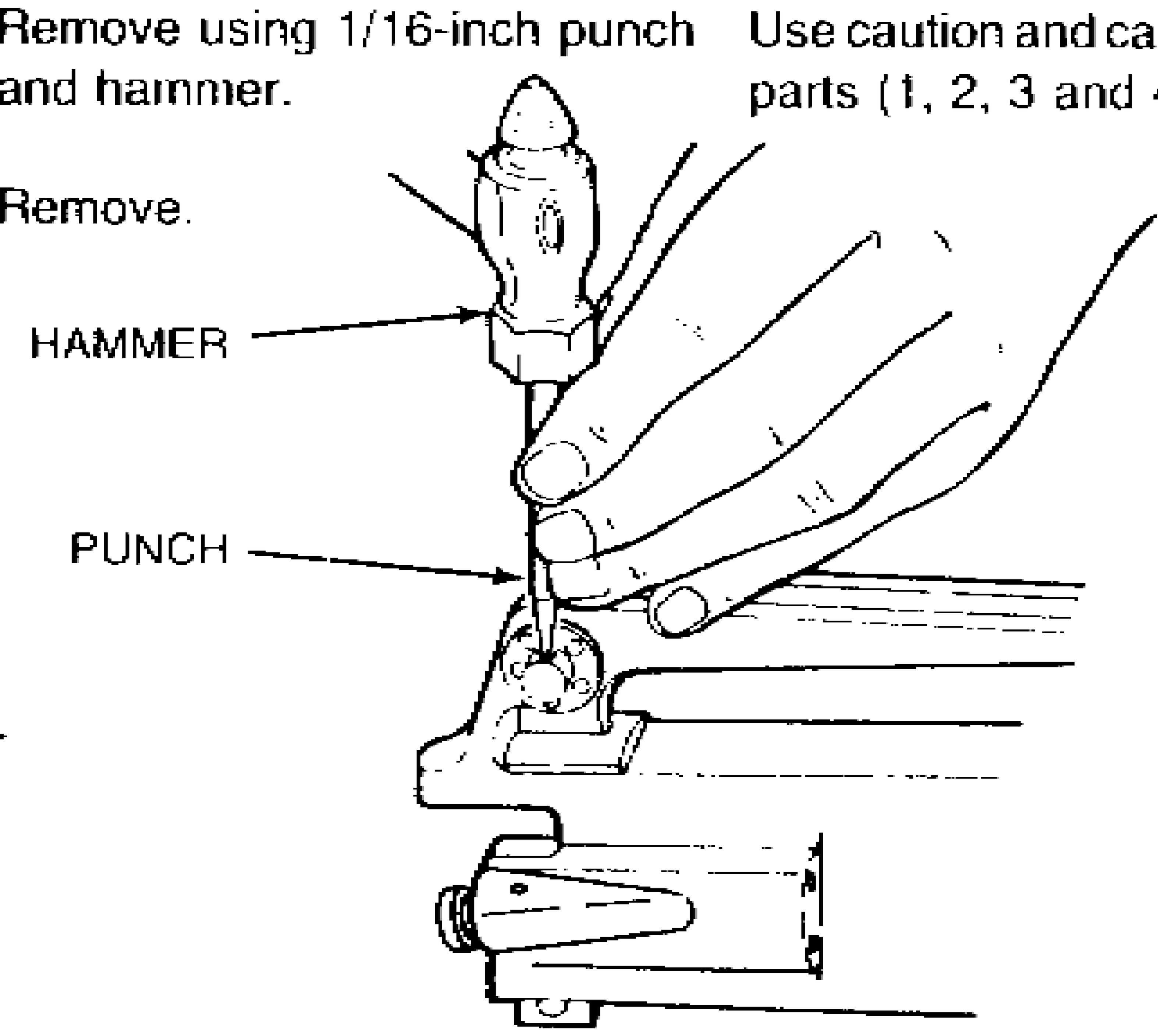
Page	Condition Description
3-27	Upper receiver removed

General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

When using solid film lubricant or dichloromethane, be sure the area is well ventilated.

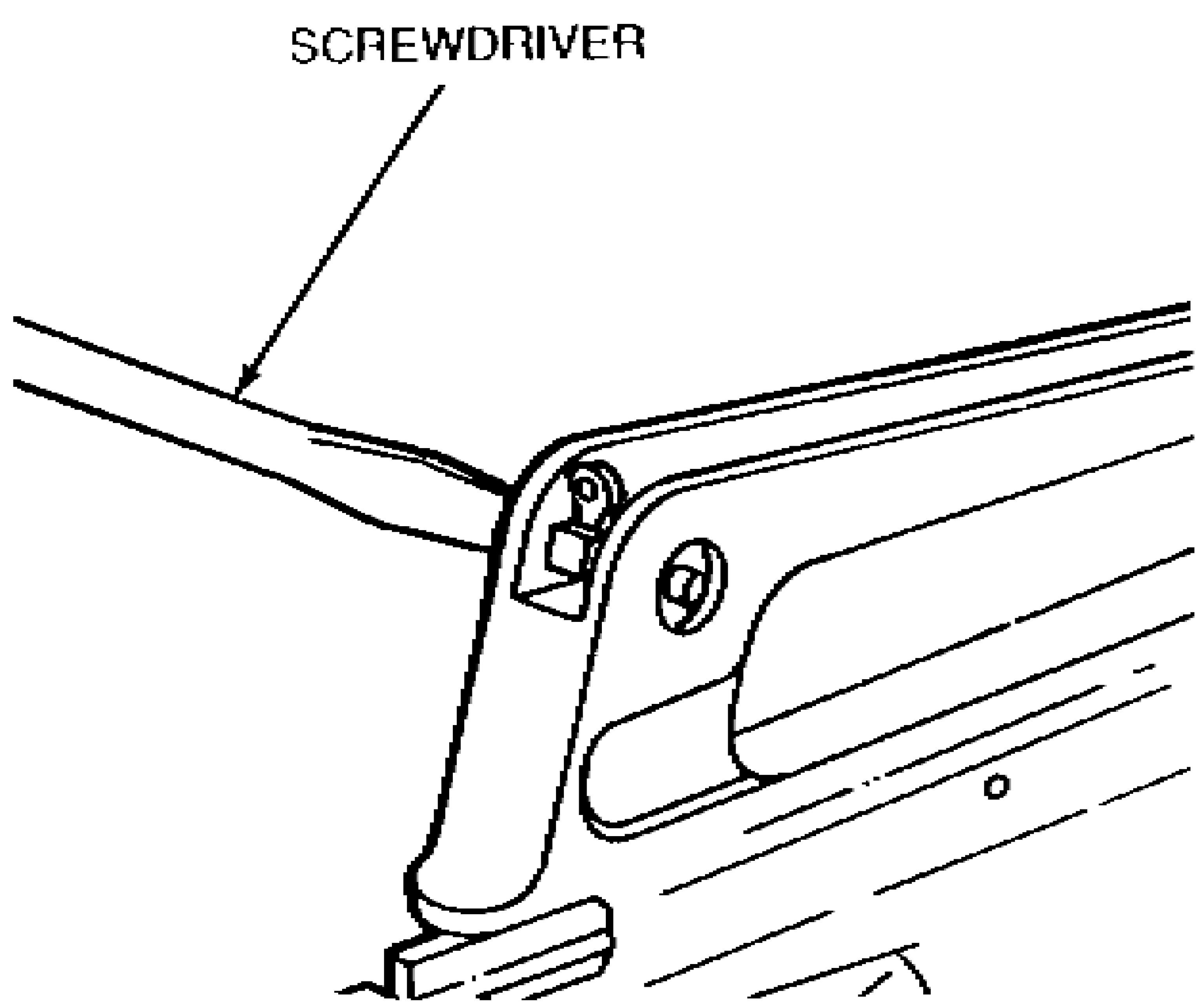
LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Upper Receiver Assembly (Both M16 and M16A1)	a. Spring pin (1)	Remove using 1/16-inch punch and hammer.	Use caution and catch small parts (1, 2, 3 and 4).
	b. Rear sight windage drum (2), rear sight detent (3), and helical spring (4)	Remove.	

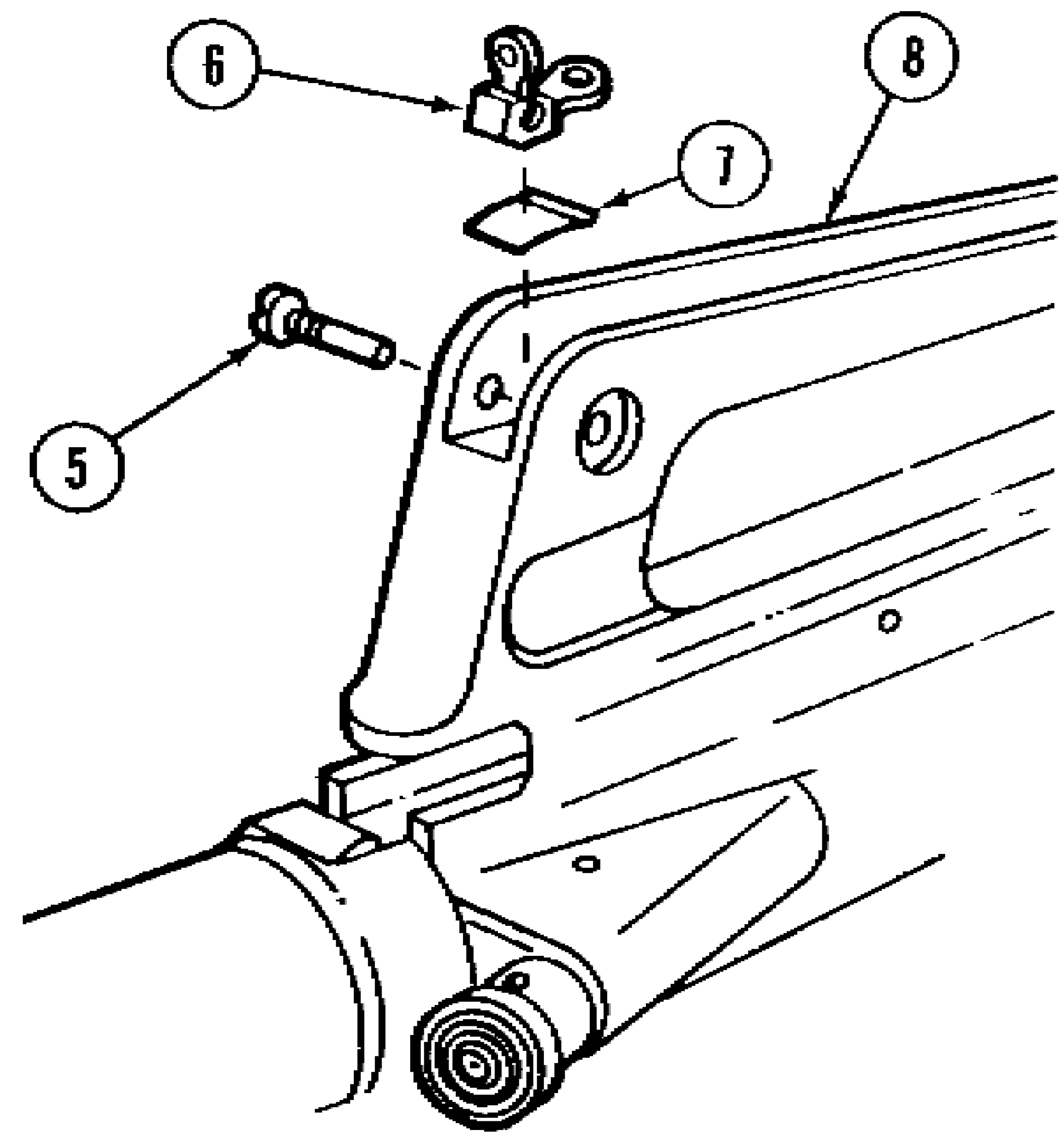




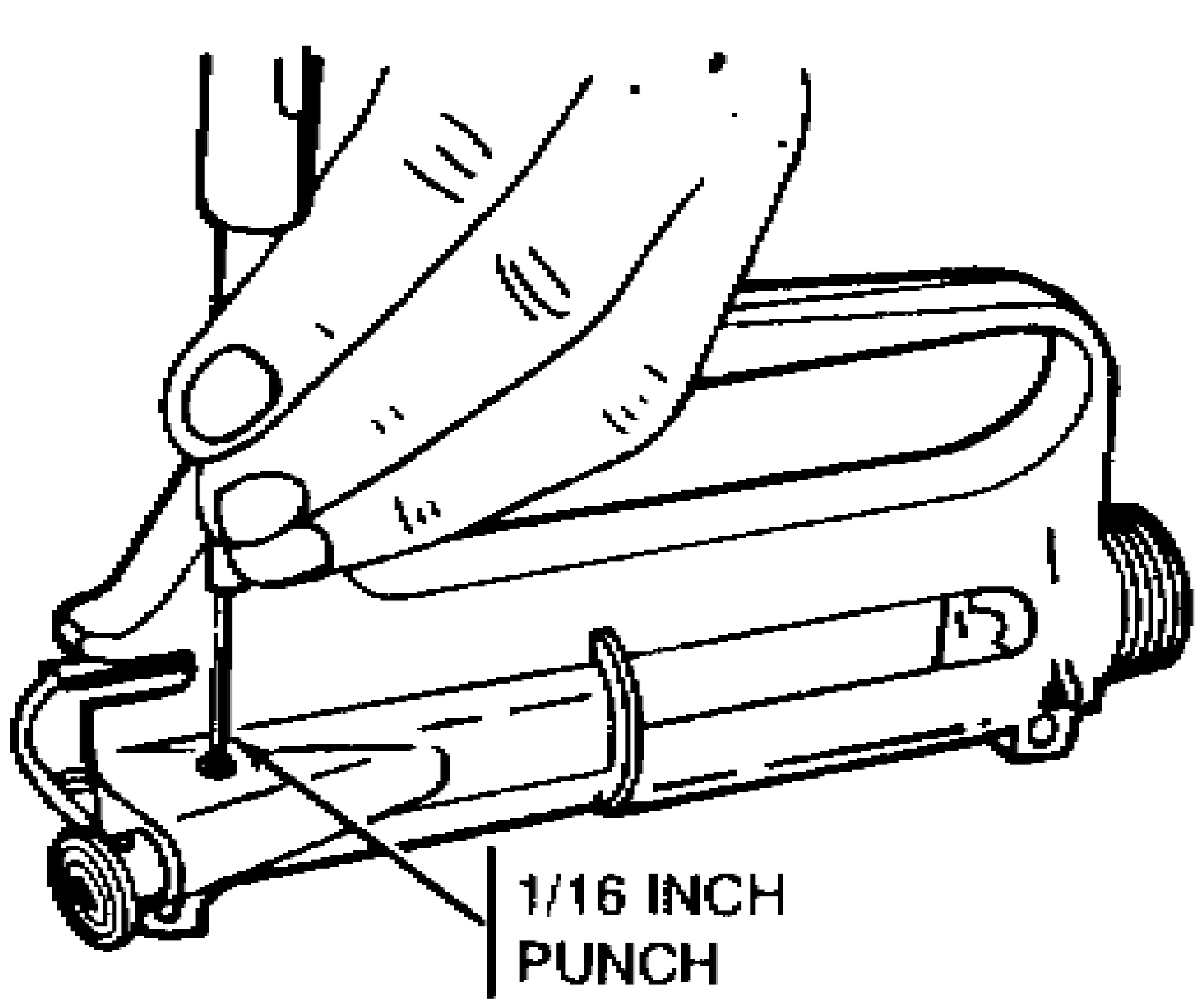
3-14. UPPER RECEIVER ASSEMBLY (CONT).

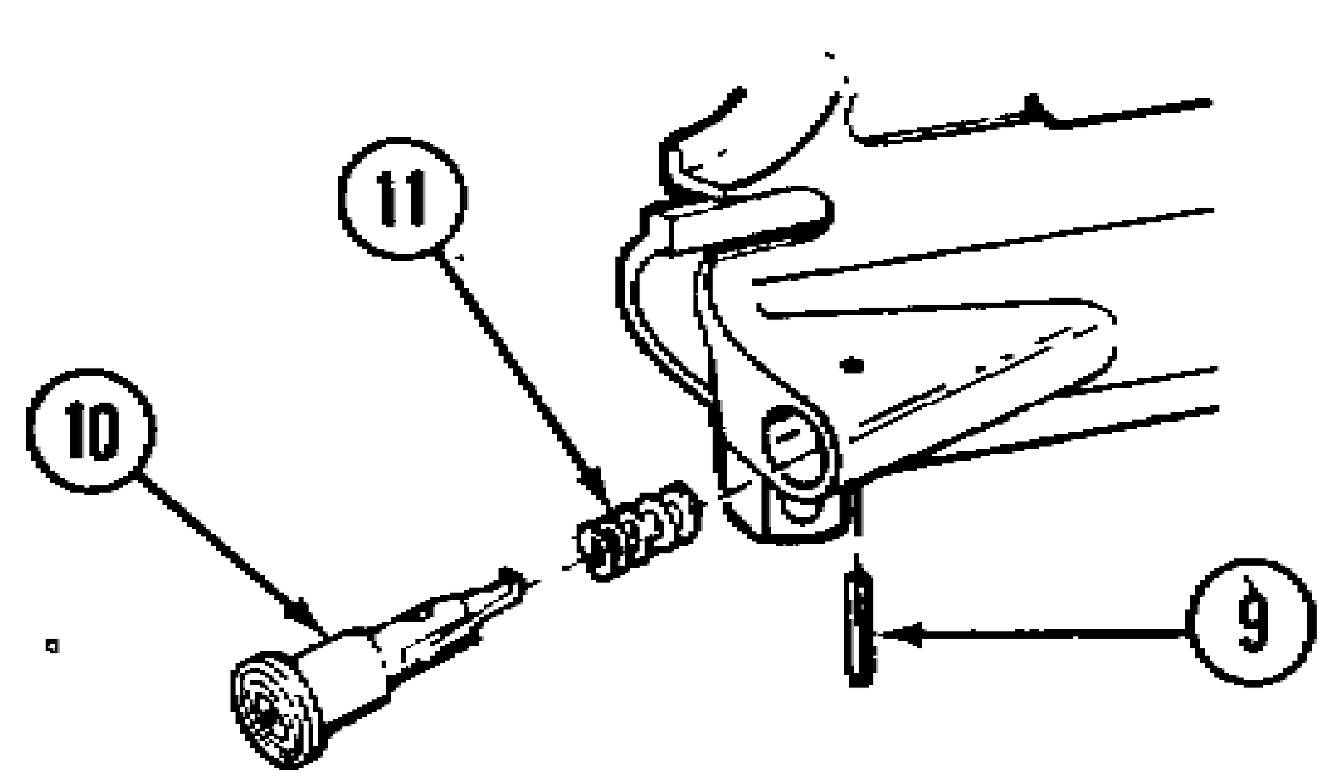
LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY (CONT)			
	c. Rear sight windage screw (5)	Remove using flat-bladed screwdriver.	
	d. Aperture sight 6), flat spring (7), and upper receiver (8)	Remove.	End of disassembly for M16 rifle.



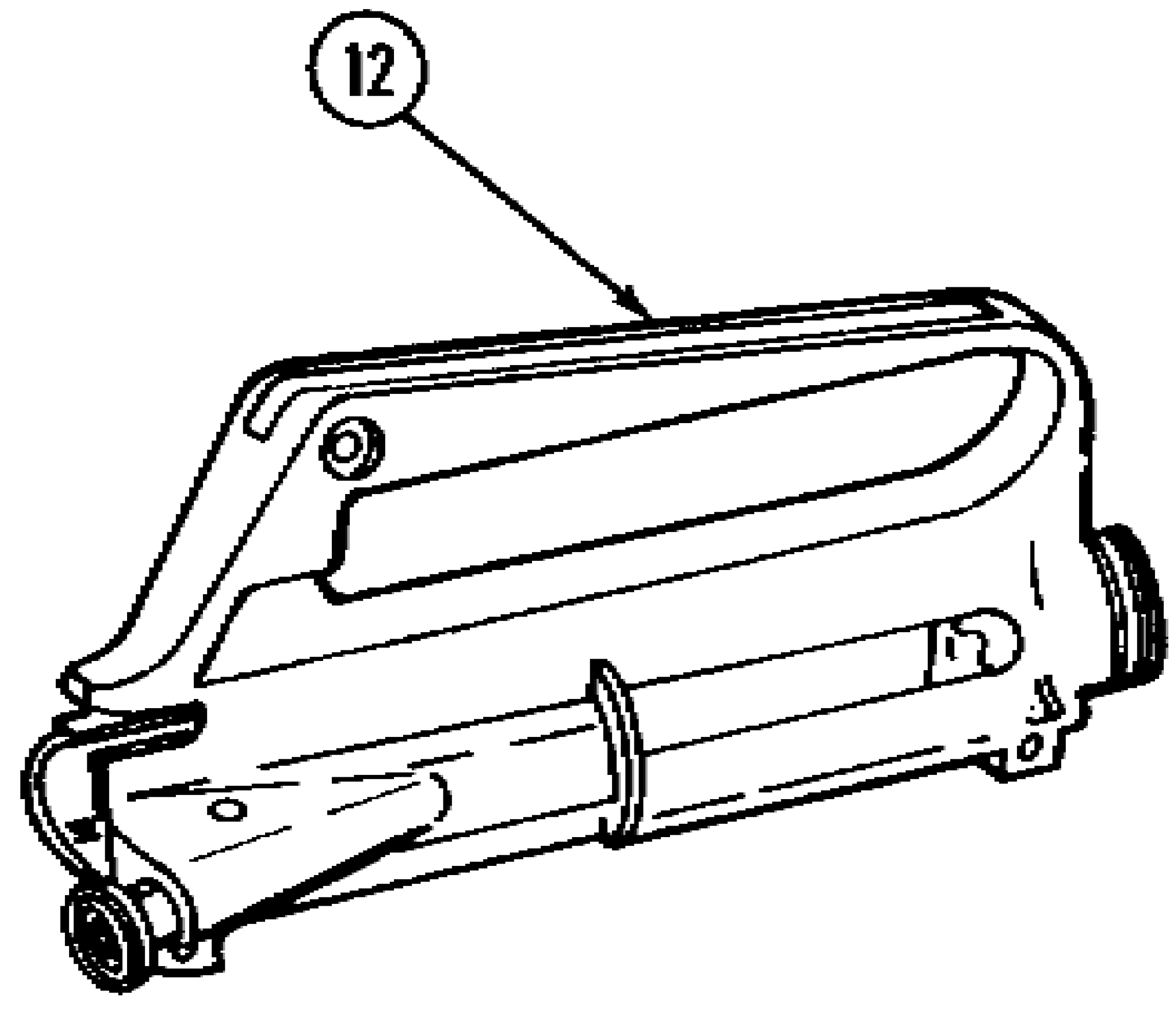


	e. Spring pin (9)	Remove using 3/32-inch drive pin punch and hand hammer.	M16A1 rifles only.



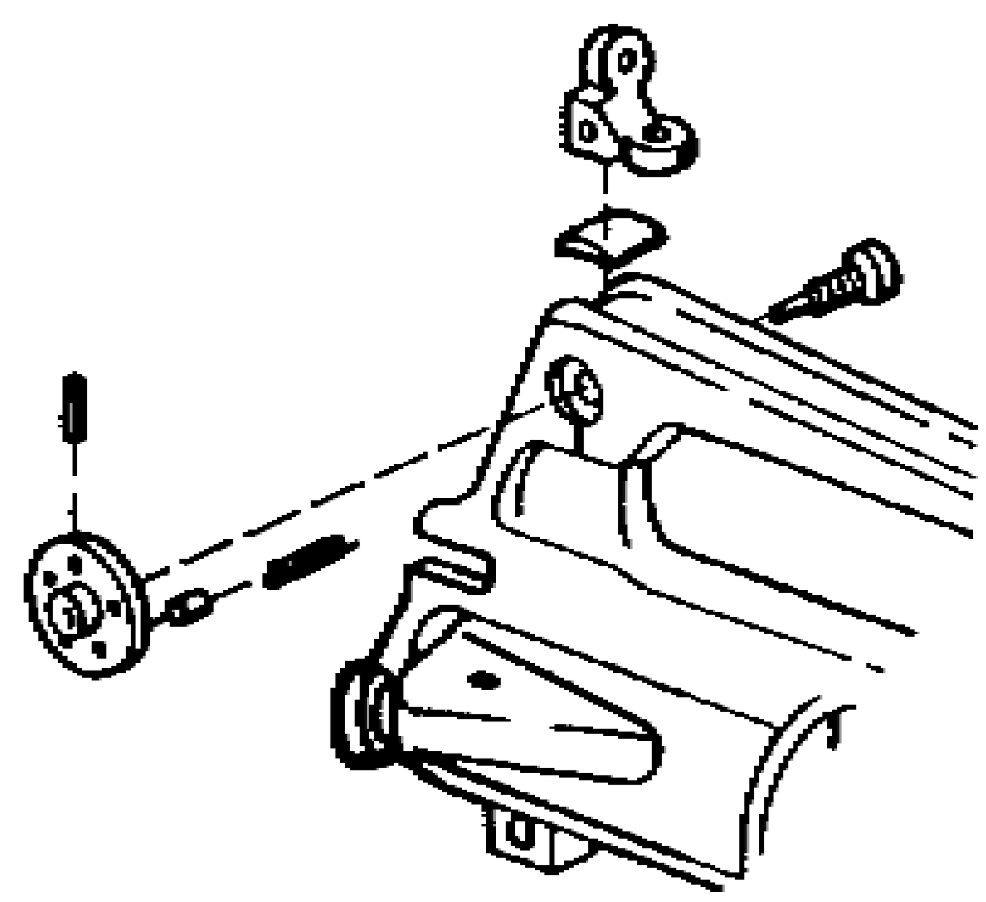


LOCATION	ITEM	ACTION	REMARKS
	f. Forward assist assembly (10), helical spring (11), and upper receiver (12)	Remove.	M16A1 rifles only.



INSPECTION

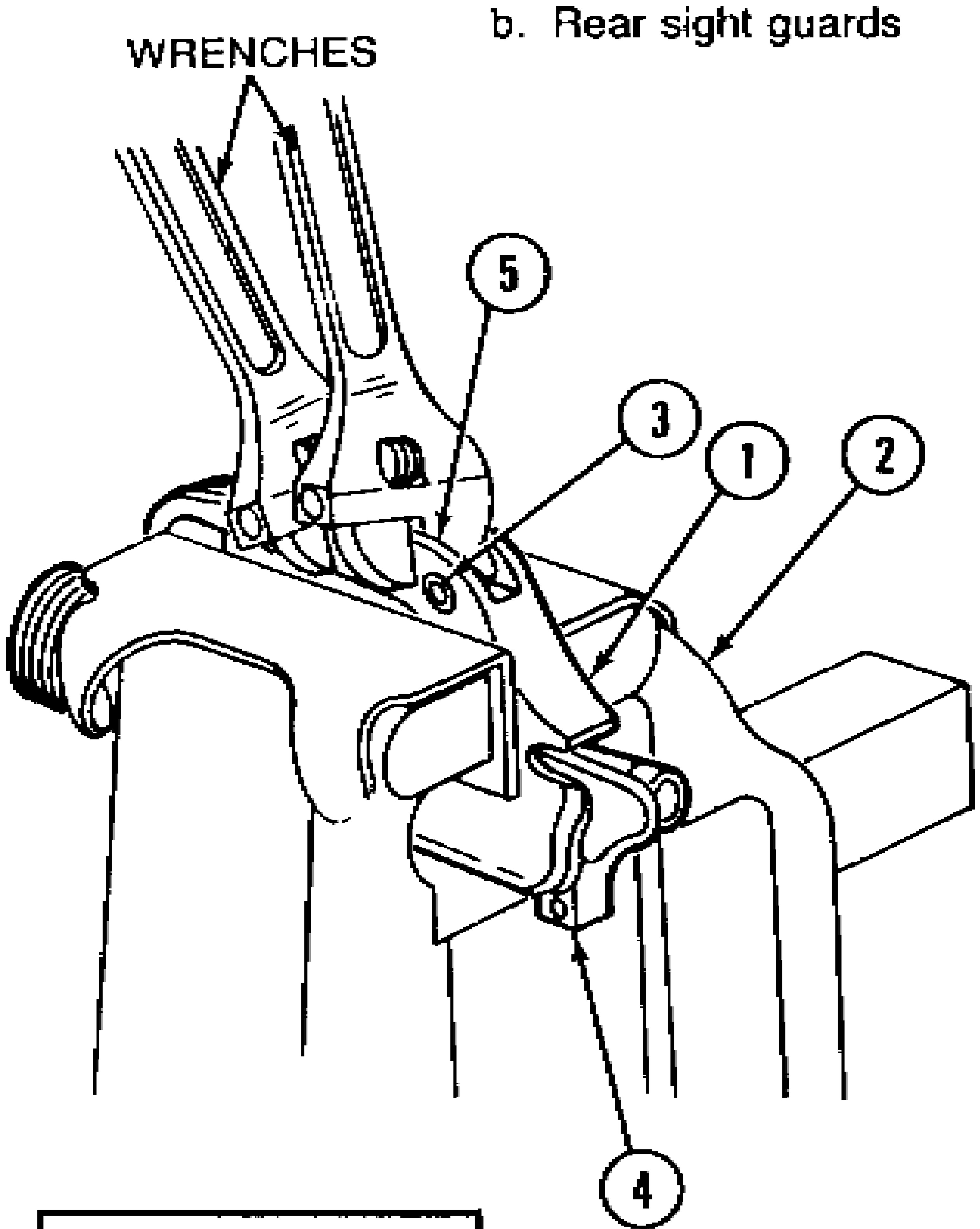
LOCATION	ITEM	ACTION	REMARKS
Upper Receiver Assembly	a. Rear sight parts	Check for serviceability. Replace if defective.	
	b. Rear sight spring	Check for serviceability. Replace if defective	Make a visual inspection. Look for broken springs, bent shaft or missing parts.



LOCATION	ITEM	ACTION	REMARKS
	c. Upper receiver	Check for cracks, corrosion, and mutilation.	Same requirements for M16 rifles.
		Repair or replace if defective.	Refer to page 3-27.
	d. Flat spring	Spring shall retain the sight firmly in either position.	If sight is not firm, replace spring.

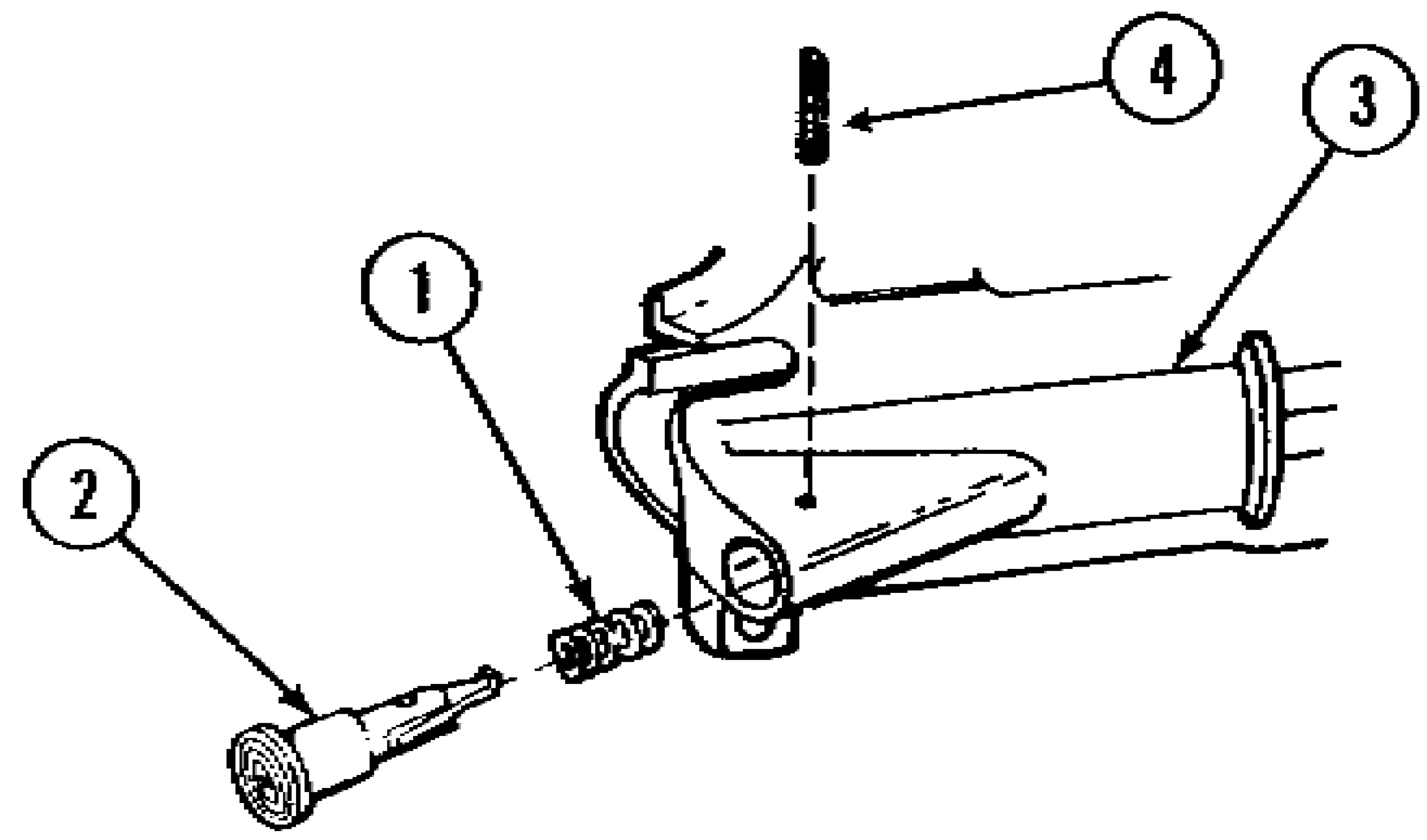
3-14. UPPER RECEIVER ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
REPAIR			
Upper Receiver Assembly	a. All authorized items	Refer to page 3-27 for repair.	
	b. Rear sight guards	Remove rear sight components and place carrying handle (1) in a vise (2) with top edge of vise at a point just below the windage screw hole (3).	Tighten vise (2) to firmly hold upper receiver (4).
		Using two eight-inch adjustable wrenches, gradually bend guard (5) to straighten.	When bending the guards (5), gradually bend beyond the straight point, as the guard will partially return when bending pressure is stopped.
		After straightening, use a flat file to remove any nicks, kinks, or burrs that remain on the inside of guards (5).	
		Apply solid film lubricant (item 13, app D) to brightened area for final protective coating.	
		Replace rear sight components and check sight functions properly.	If sight functions check out, return upper receiver to service.

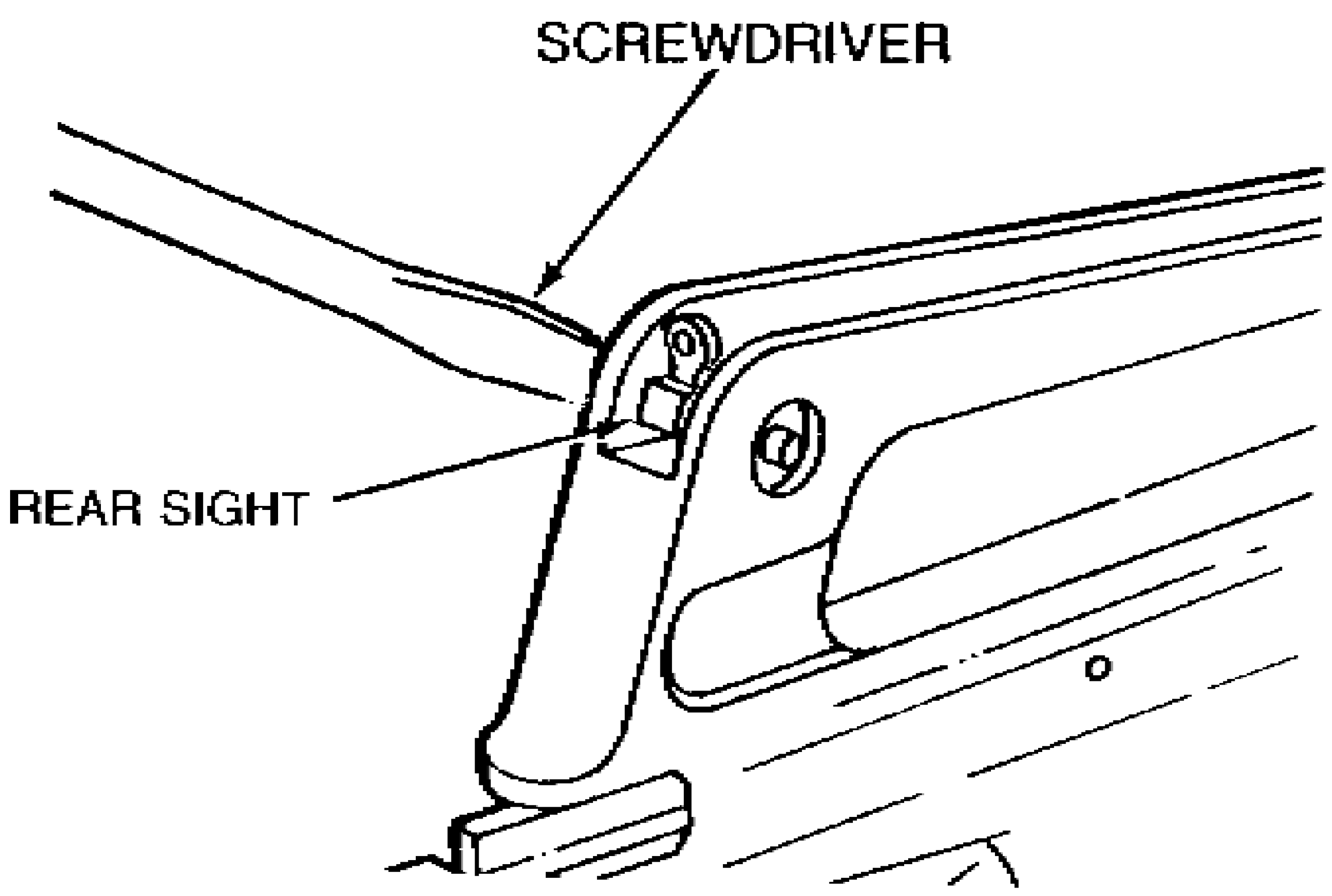


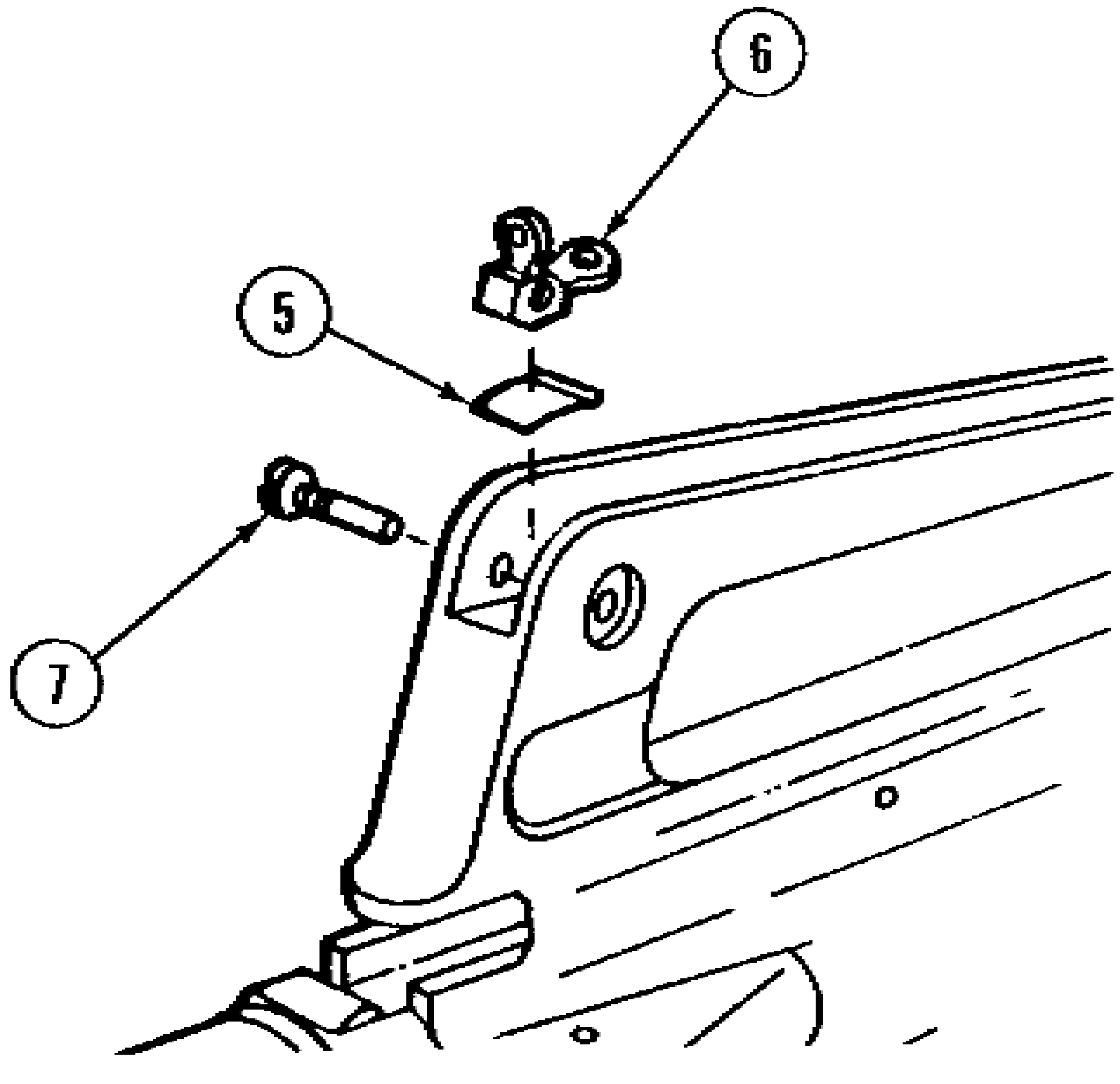
LOCATION	ITEM	ACTION	REMARKS
LUBRICATION			
Upper Receiver Assembly		Lubricate.	Apply CLP (item 5, app D) and oil to spring, screw threaded portion, and sight before installation.
REASSEMBLY			
Upper Receiver Assembly	a. Helical spring (1), and forward assist assembly (2)	Install to upper receiver assembly (3).	Apply CLP (item 5, app D) to spring before installation on M16A1 rifles only.

LOCATION	ITEM	ACTION	REMARKS
	b. Spring pin (4)	Install using 3/32-inch drive pin punch and hand hammer.	Apply CLP (item 5, app D) oil to spring, screw, and threaded portion and sight before installation.



	c. Flat spring (5)	Install.	
	d. Aperture sight (6)	Install with letter L to rear.	
	e. Rear sight windage screw (7)	Install using flat tip screwdriver and tighten.	





3-14. UPPER RECEIVER ASSEMBLY (CONT).

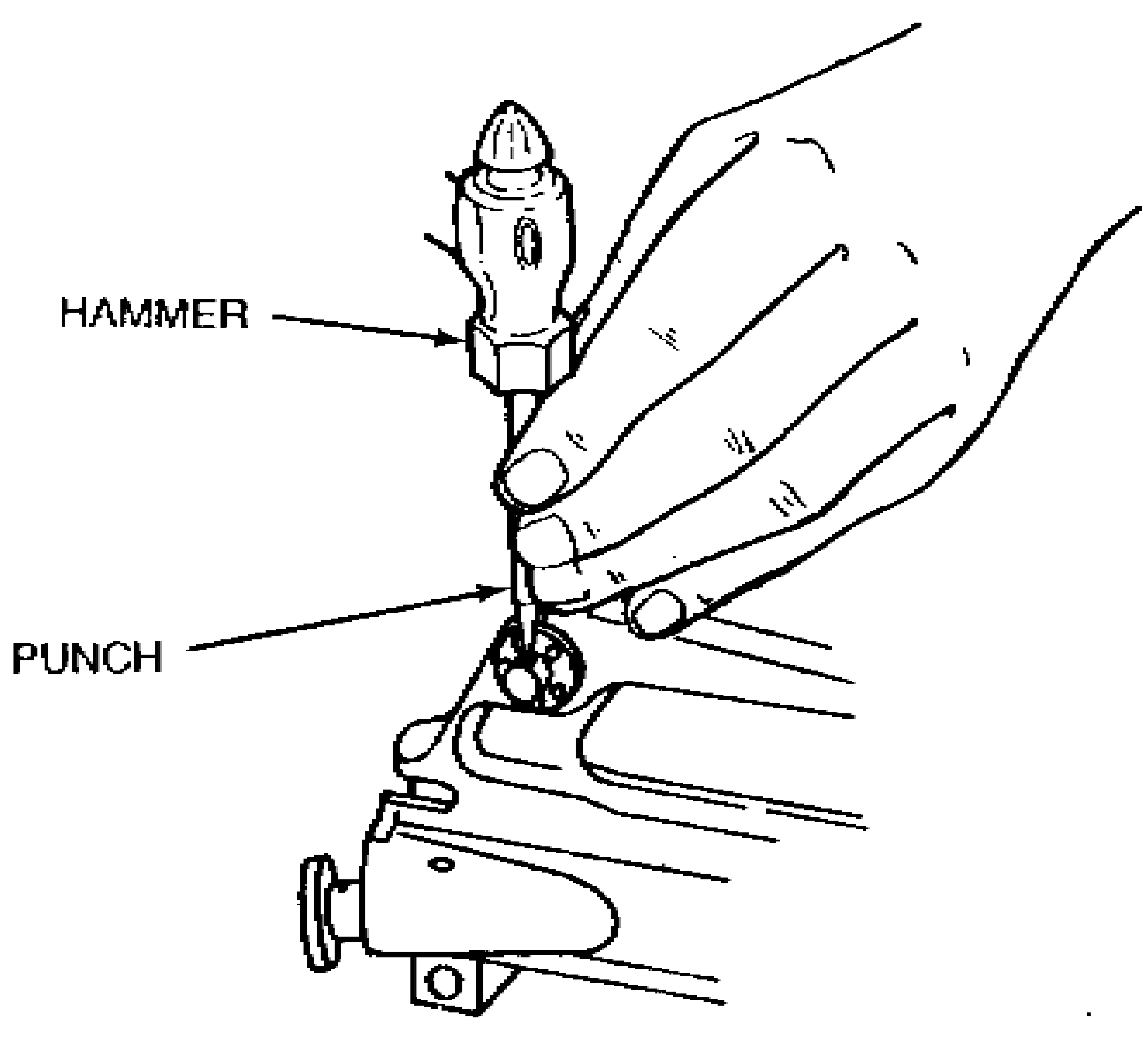
LOCATION	ITEM	ACTION	REMARKS

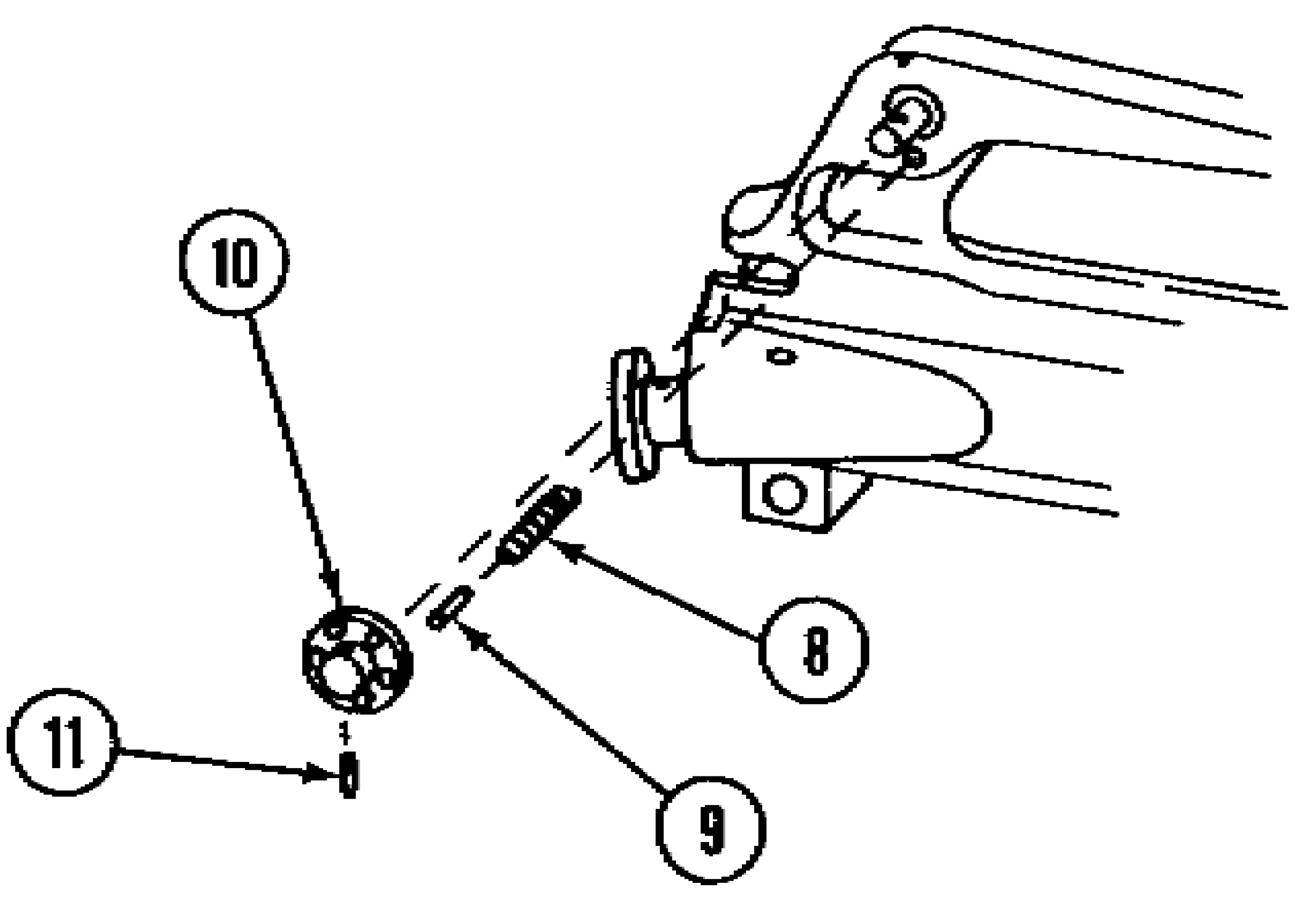
REASSEMBLY (CONT)

WARNING

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

LOCATION	ITEM	ACTION	REMARKS
	g. Helical spring (8), rear sight detent (9), and rear sight windage drum (10)	Install.	
	h. Spring pin (11)	Install using 1/16-inch drive pin punch and hammer.	





3-15. FORWARD ASSIST ASSEMBLY.

This task covers:

a. Disassembly
b. Inspection
c. Repair
d. Reassembly

INITIAL SETUP

Applicable Configuration
M16A1 rifle only

Tools
Small Arms Repairman Tool Kit SC 5180-95-CL-A07 (19204)
Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)

Materials/Parts
Cleaner, lubricant and preservative (CLP) (item 5, app D)

Equipment Condition

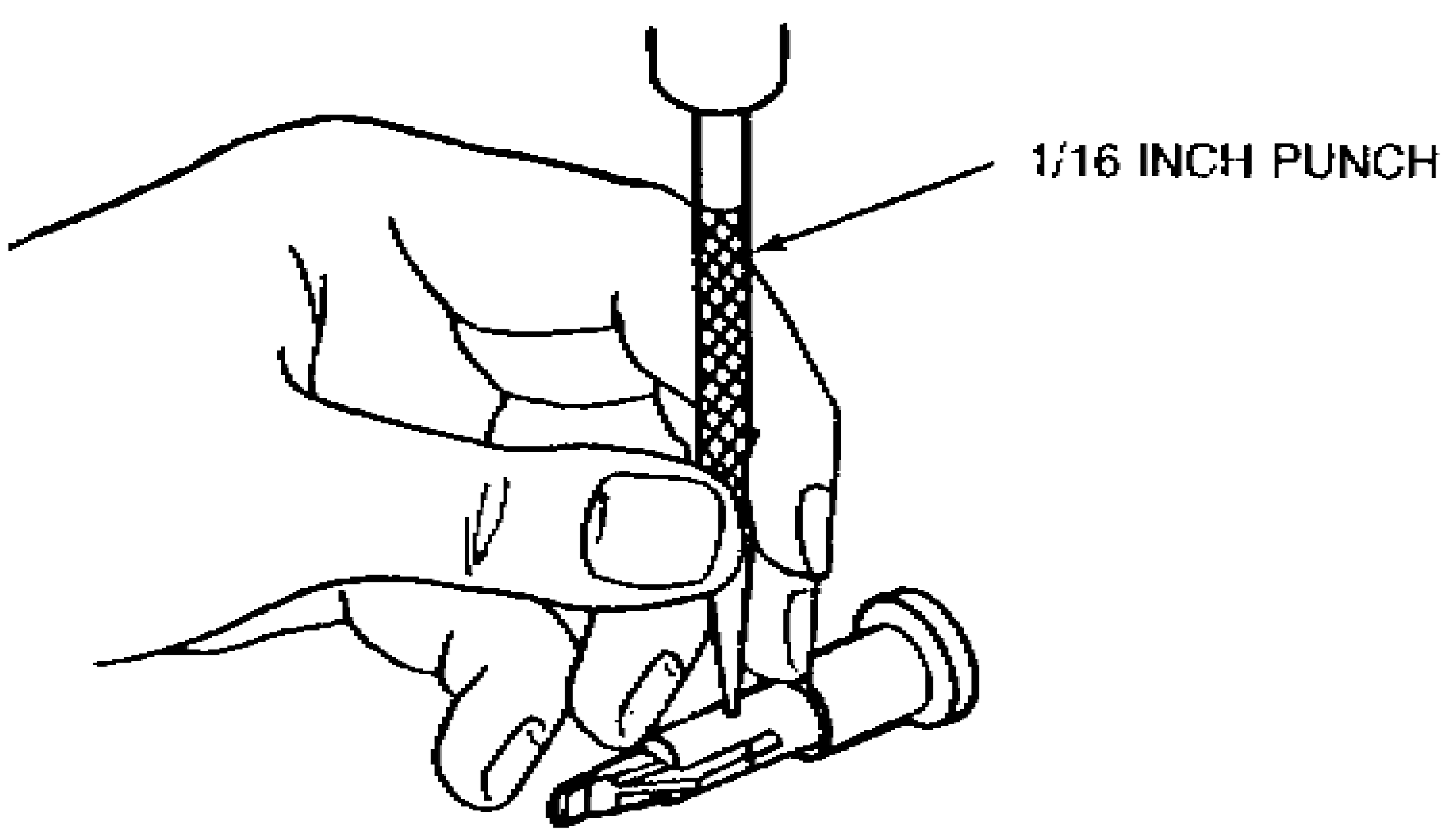
Page	Condition Description
3-42	Forward assist assembly removed

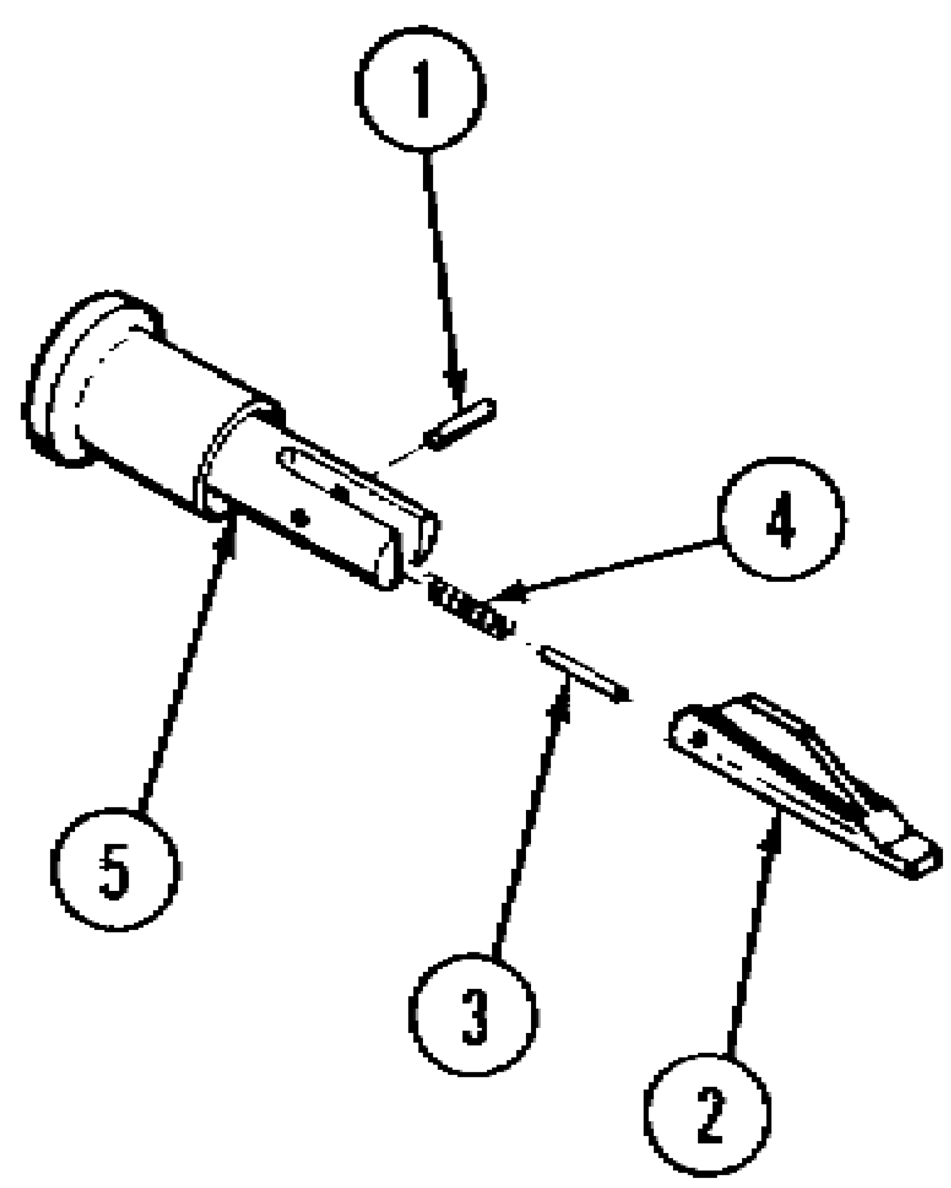
General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Forward Assist Assembly	a. Spring pin (1)	Remove using 1/16-inch drive pin punch and hand hammer.	
	b. Forward assist pawl (2), pawl detent (3), helical spring (4), and plunger assembly (5)	Remove.	





3-15. FORWARD ASSIST ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
Forward Assist Assembly	a. Forward assist pawl	Inspect for burrs, chips, and cracks.	Minor burrs may be removed using fine files or stones, as required.
		Replace if defective.	
	b. Pawl detent	Inspect for burrs and cracks.	Minor burrs may be removed using fine files or stones, as required.
		Replace if defective.	
	c. Helical spring	Inspect for kinks, breaks, and wear.	
		Replace if defective.	
	d. Plunger assembly	Inspect for wear, burrs, chips, and breaks.	Minor burrs may be removed using fine files or stones, as required.
		Replace if defective.	
REPAIR			
Forward Assist Assembly	a. Forward assist pawl	Using fine files or stones, as required, smooth burrs but do not deform forward assist pawl.	
	b. Pawl detent	Using fine files or stones, as required, smooth burrs but do not deform pawl detent.	
	c. Plunger assembly	Using fine files or stones, as required, smooth burrs but do not deform plunger assembly.	

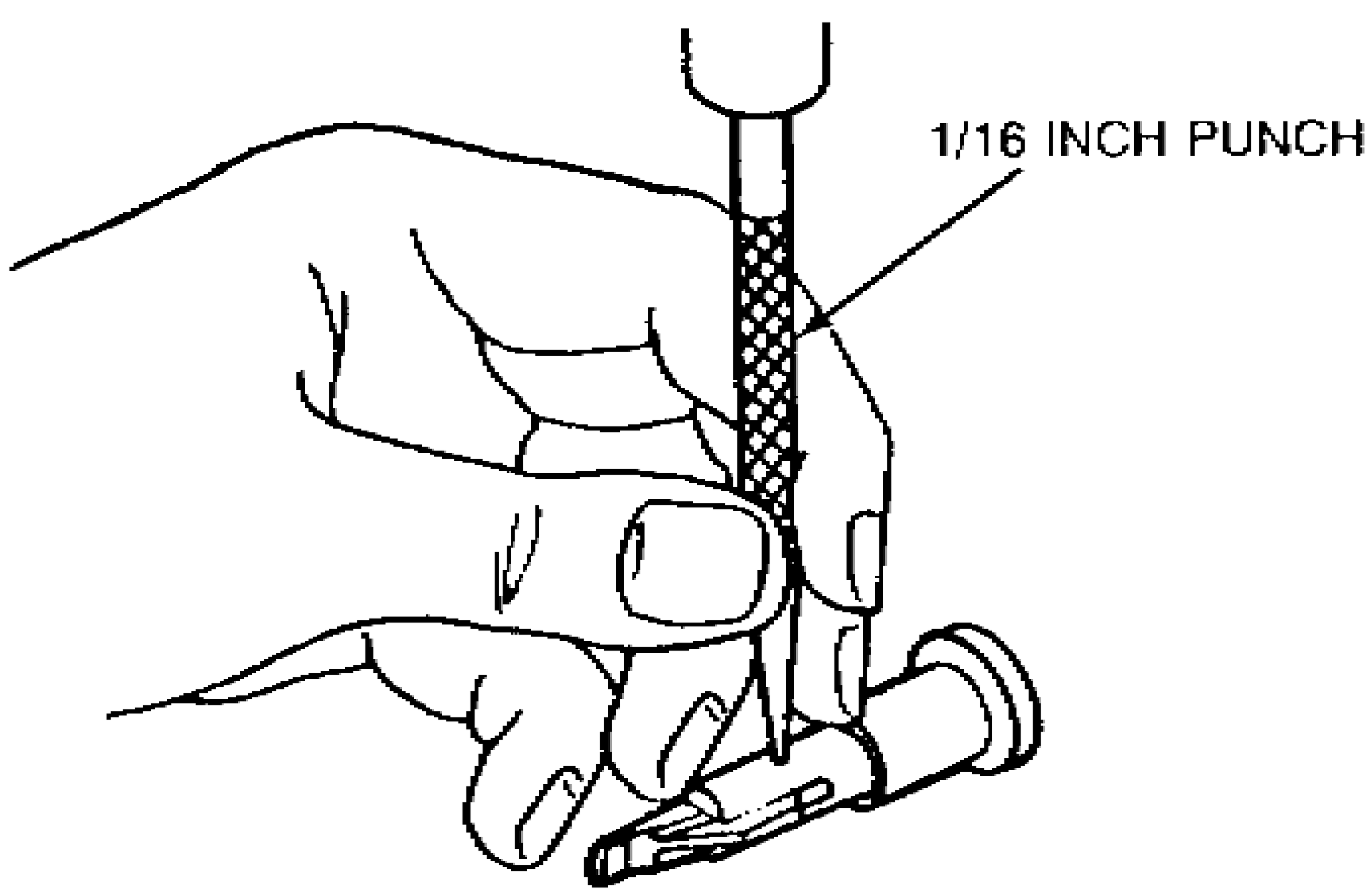
LOCATION	ITEM	ACTION	REMARKS

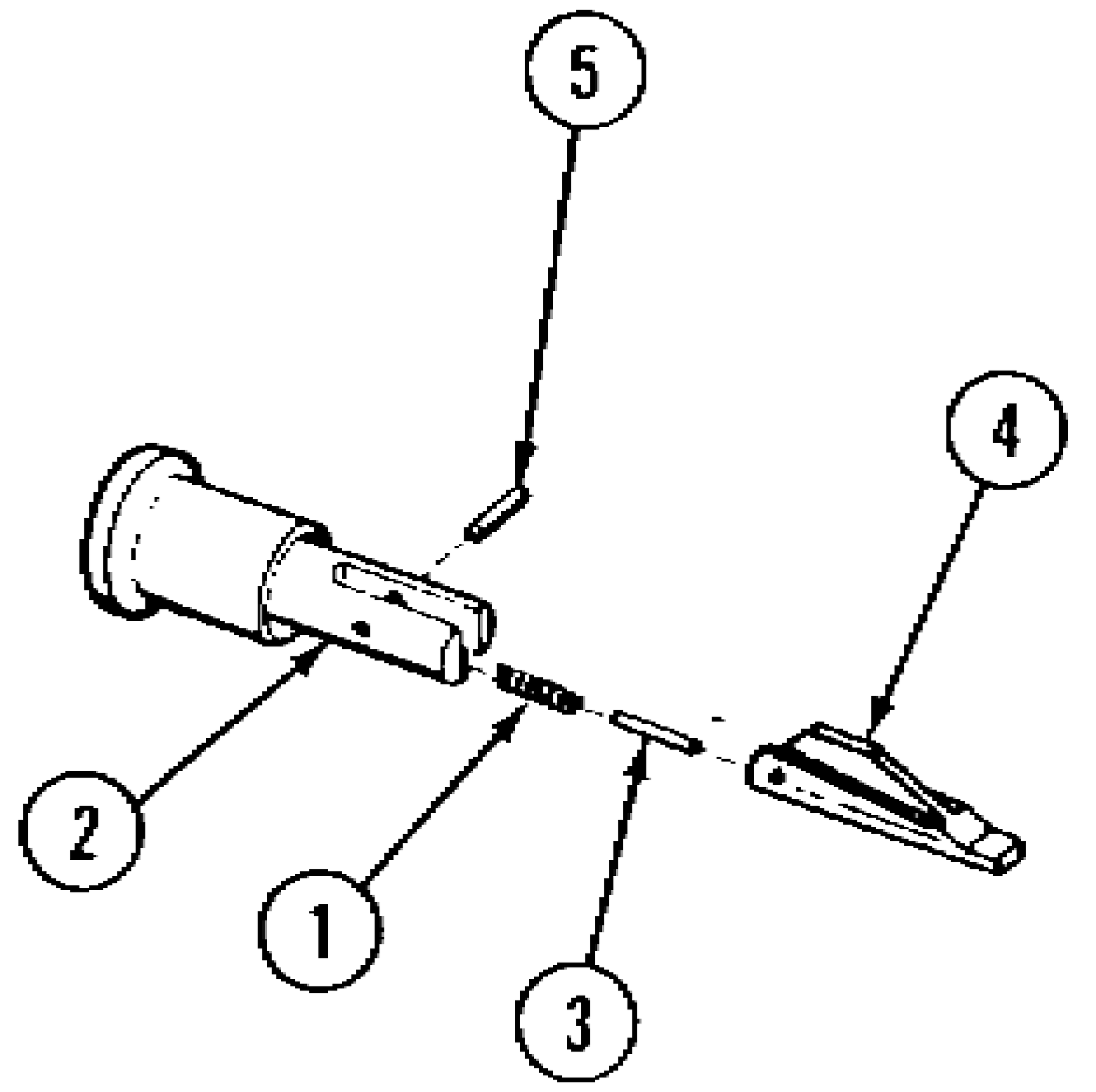
REASSEMBLY

WARNING

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

LOCATION	ITEM	ACTION	REMARKS
Forward Assist Assembly		Lubricate.	Apply CLP (item 5, app D) to forward assist pawl, pawl detent, and helical spring before installation.
	a. Helical spring (1), plunger assembly (2), pawl detent (3), and forward assist pawl (4)	Install.	
	b. Spring pin (5)	Install using 1/16-inch drive pin punch and hand hammer.	





3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY.

This task covers:

a. Disassembly
b. Inspection
c. Repair
d. Test
e. Reassembly

INITIAL SETUP

Applicable Configuration
All M16/M16A1 rifles. All parts are the same except for lower receiver body which is different only in that it specifies the different models and the serial numbers.

Tools
Small Arms Repairman Tool Kit SC 5180-95-CL-A07 (19204)
Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)
M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8426685(19204)
Pivot pin removing tool (local fabricated tool) (E-3, app E)
Lower receiver gage (local fabricated tool) (E-5, app E)

Materials/Parts
Cleaner, lubricant and preservative (CLP) (item 5, app D)
Solid film lubricant (item 13, app D)
Technical dichloromethane (item 8, app D)

References
TM 9-1005-301-30

Equipment Condition

Page	Condition Description
3-10	Lower receiver and extension assembly removed

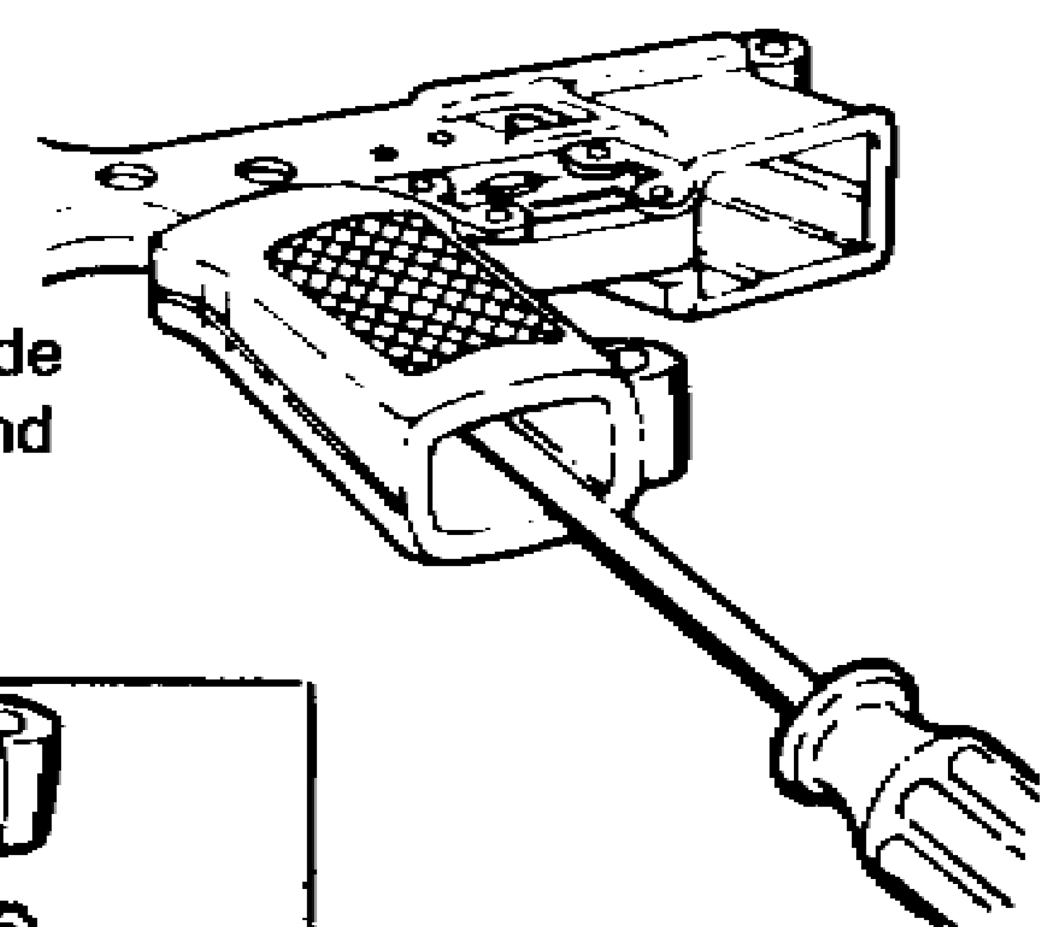
General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

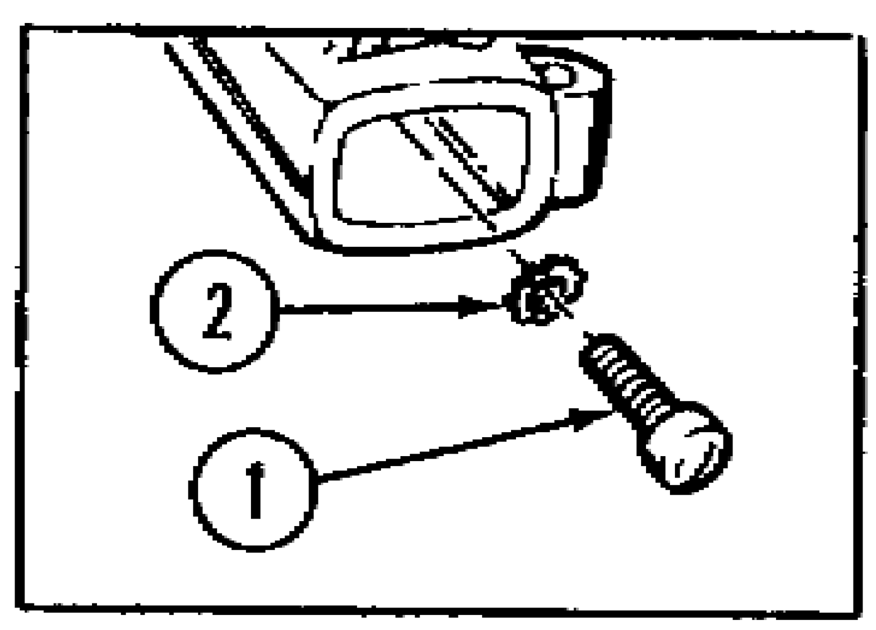
When using solid film lubricant or dichloromethane, be sure the area is well ventilated.

LOCATION	ITEM	ACTION	REMARKS

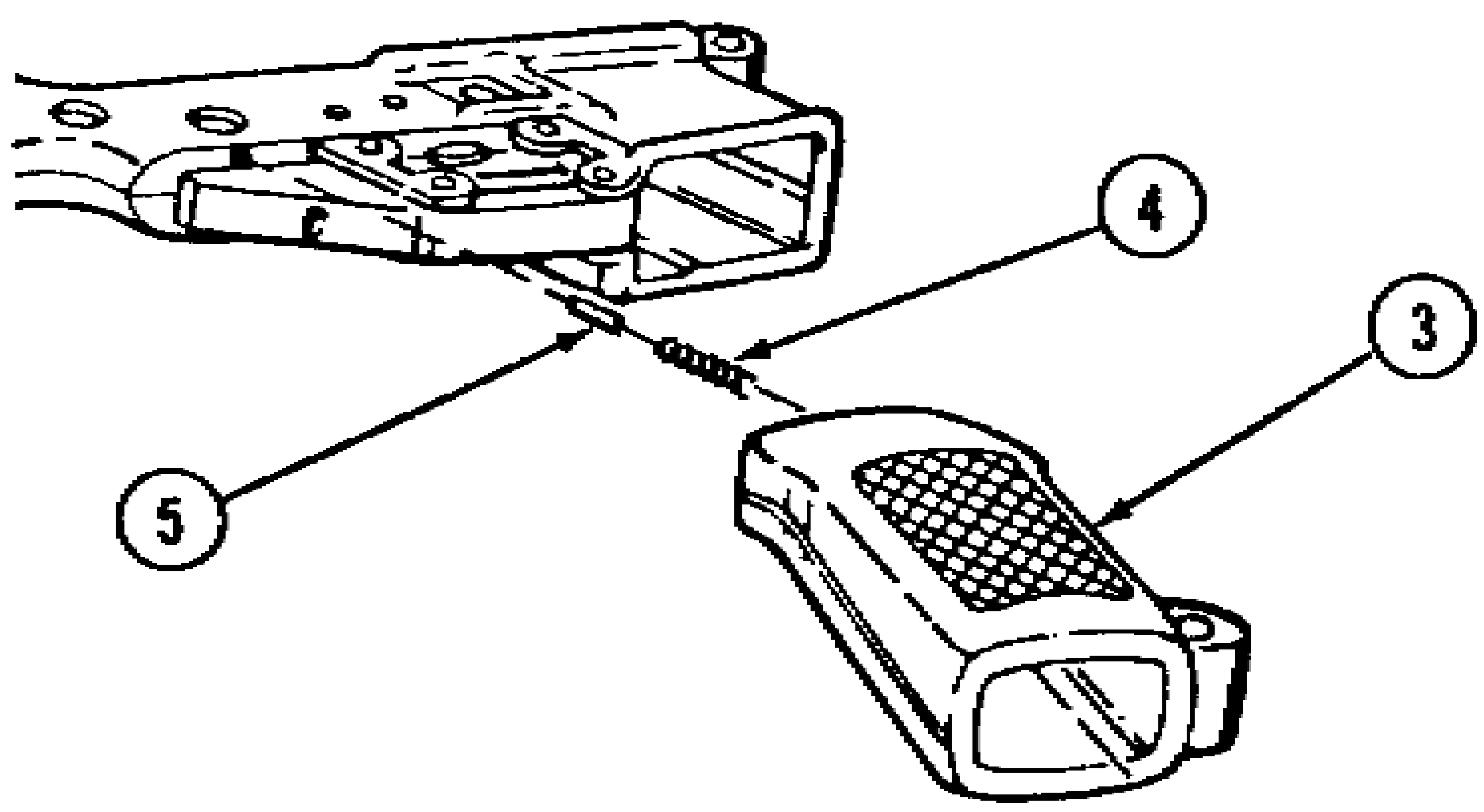
DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	a. Machine screw (1) and lock washer (2)	Using screwdriver, reach inside rifle grip and remove screw and lock washer.	

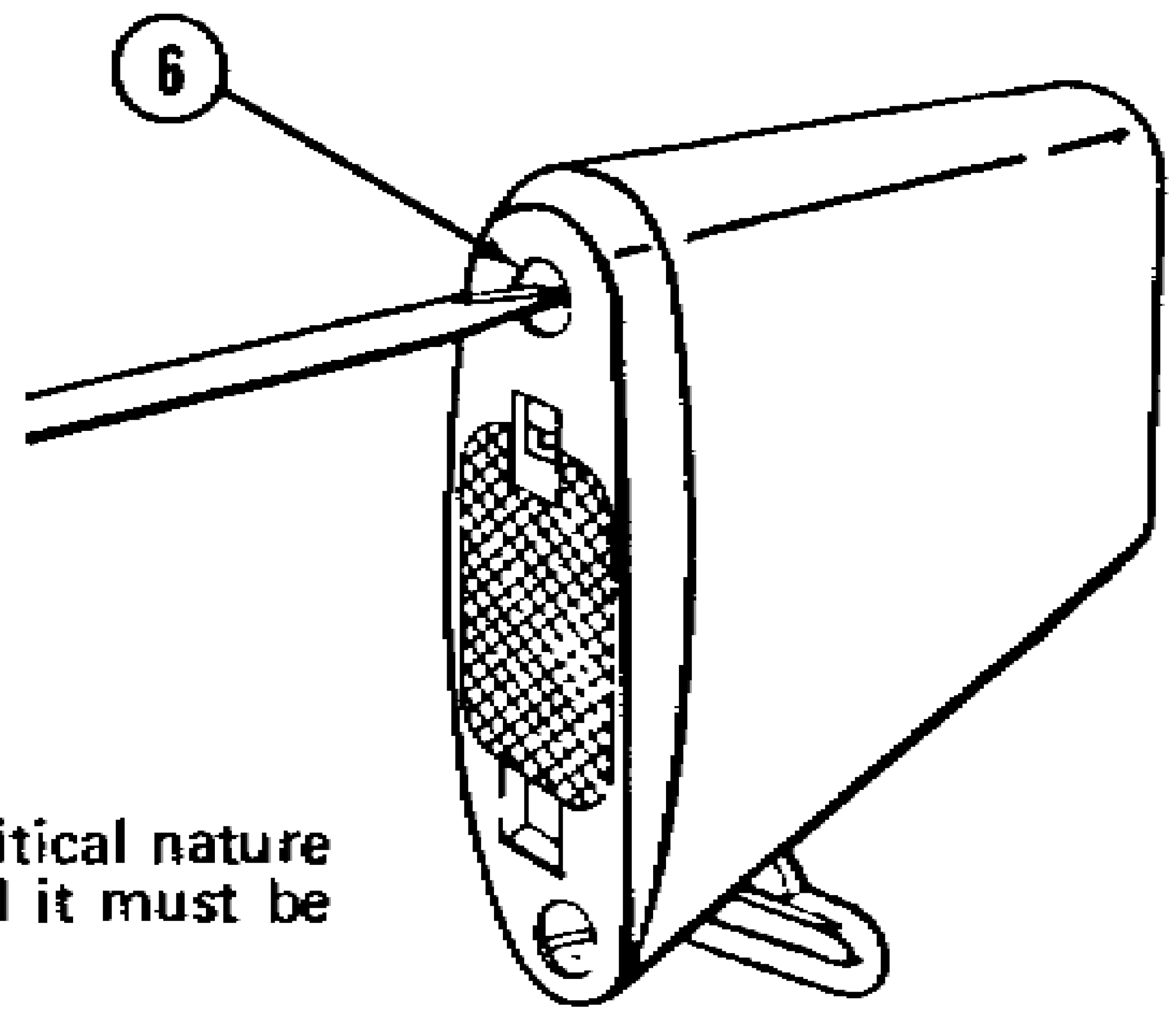




LOCATION	ITEM	ACTION	REMARKS
	b. Rifle grip (3), helical spring (4), and safety detent (5)	Carefully remove rifle grip and catch helical spring and safety detent to prevent loss.	



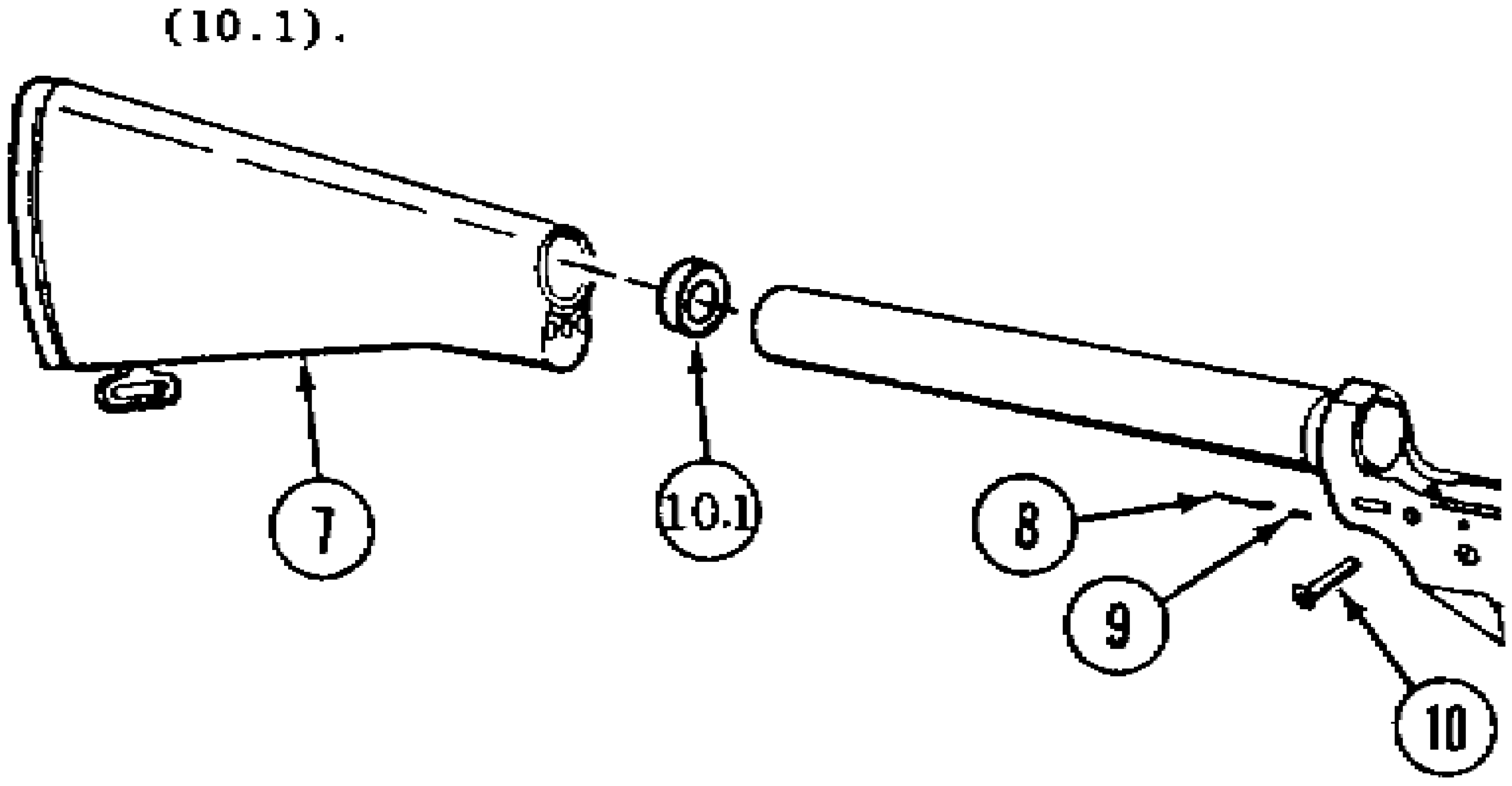
LOCATION	ITEM	ACTION	REMARKS
	c. Butt cap screw (6)	Remove.	



NOTE

The butt cap screw is a self locking screw. Due to the critical nature of the parts concerned, if the butt cap screw is removed it must be discarded and replaced with a new one.

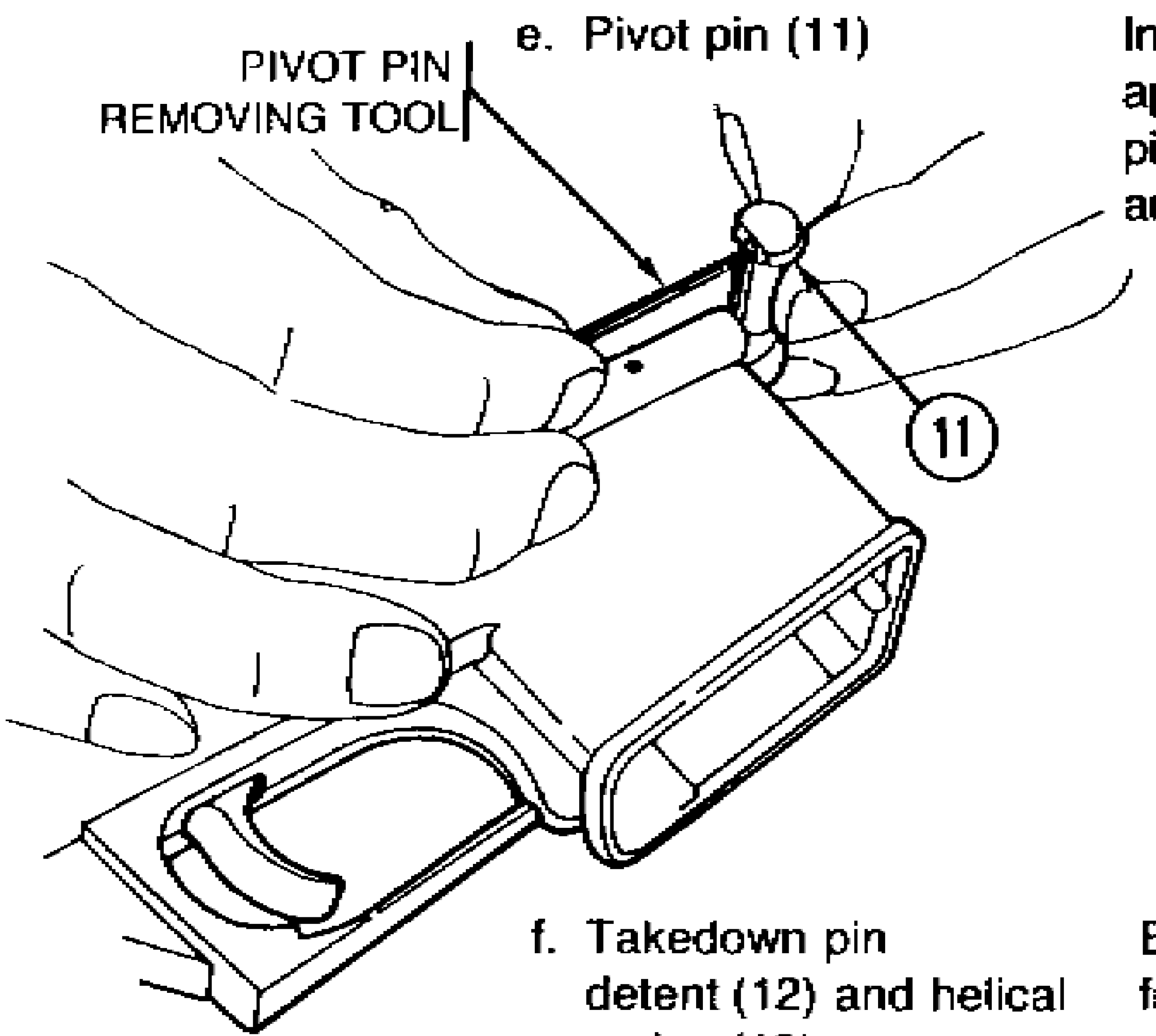
LOCATION	ITEM	ACTION	REMARKS
	d. Shoulder gun stock assembly (7), helical spring (8), takedown pin detent (9), takedown pin (10), and stepped spacer (10.1).	Remove stock carefully and catch helical spring, detent, takedown pin and stepped spacer to prevent loss.	Stepped spacer is required when utilizing buttstock assy PN 9349119. For dimensional identification of the buttstock, refer to Figure C-11A.



3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

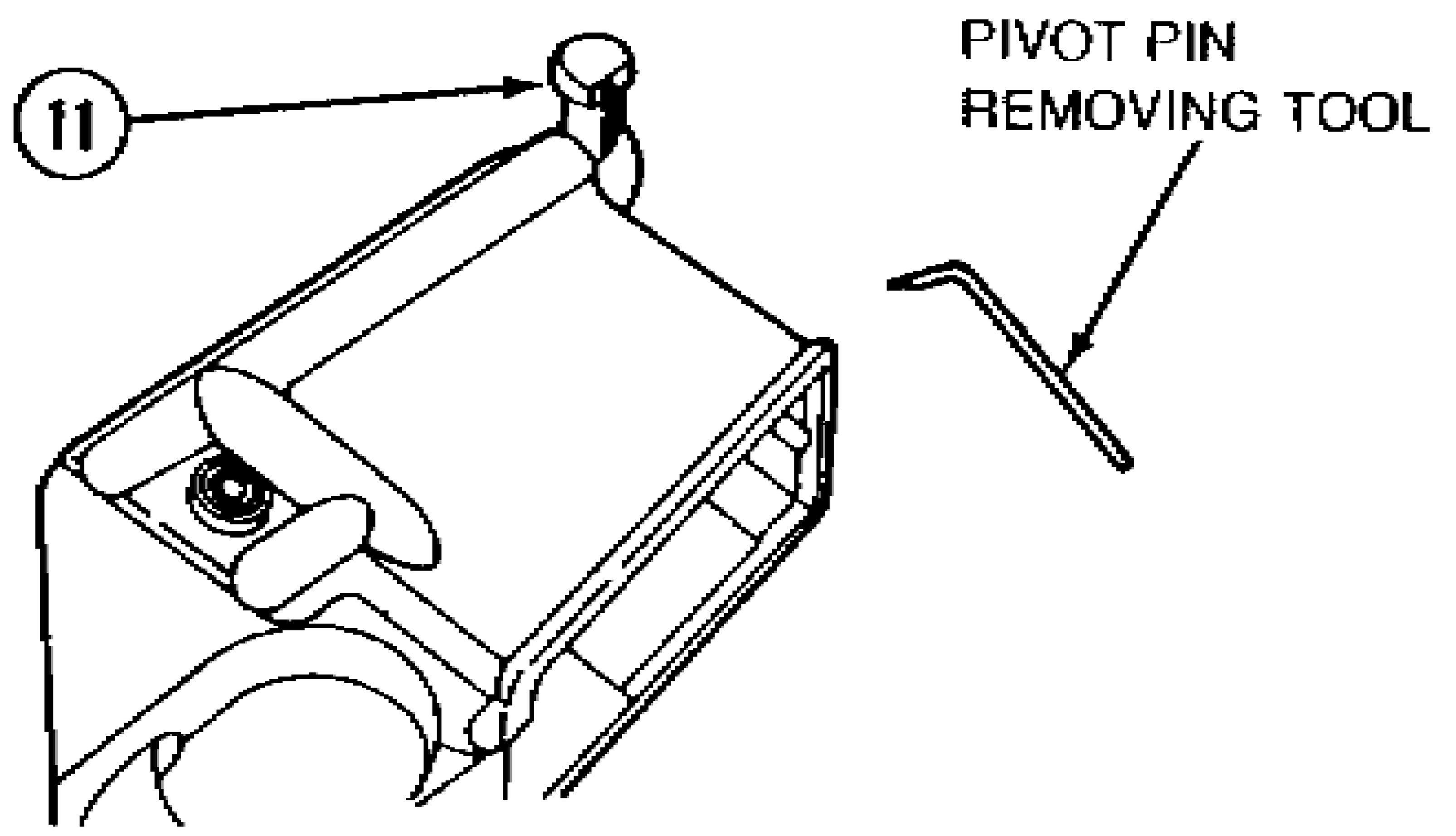
LOCATION	ITEM	ACTION	REMARKS

DISASSEMbLY (CONT)



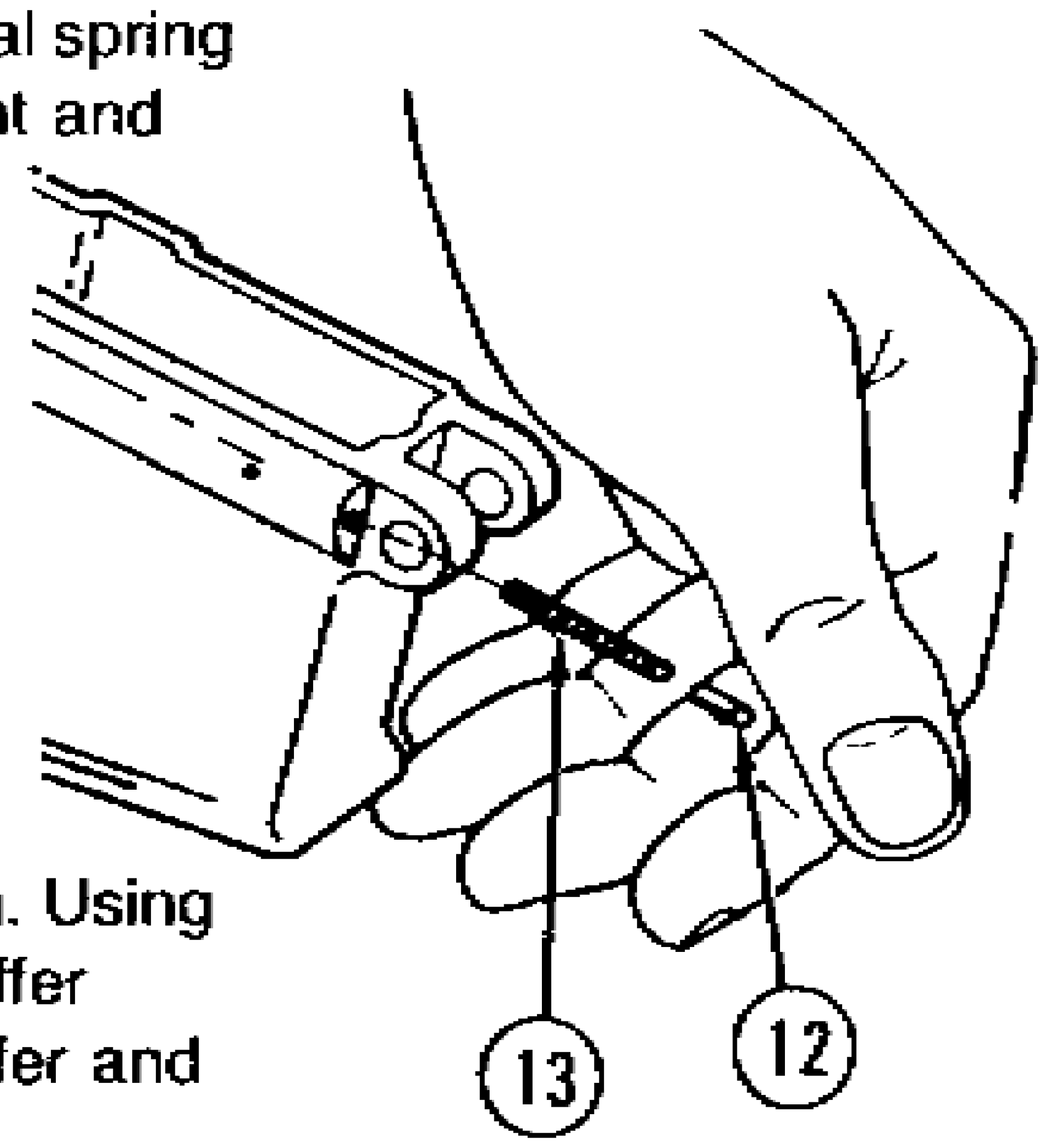
e. Pivot pin (11)

Insert fabricated tool (E-3, app E) to compress detent. Turn pin a quarter turn. Remove tool and pin.



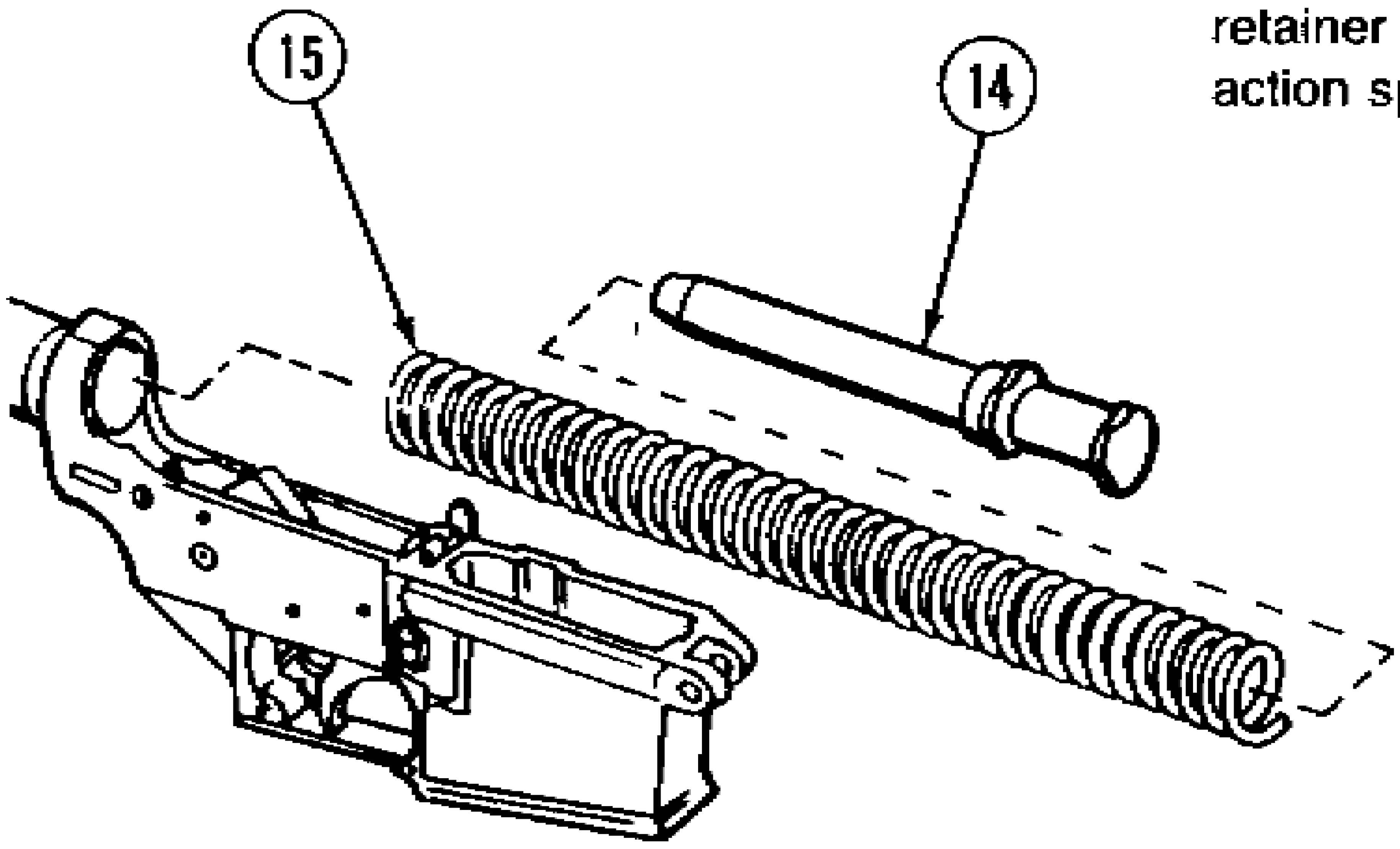
f. Takedown pin detent (12) and helical spring (13)

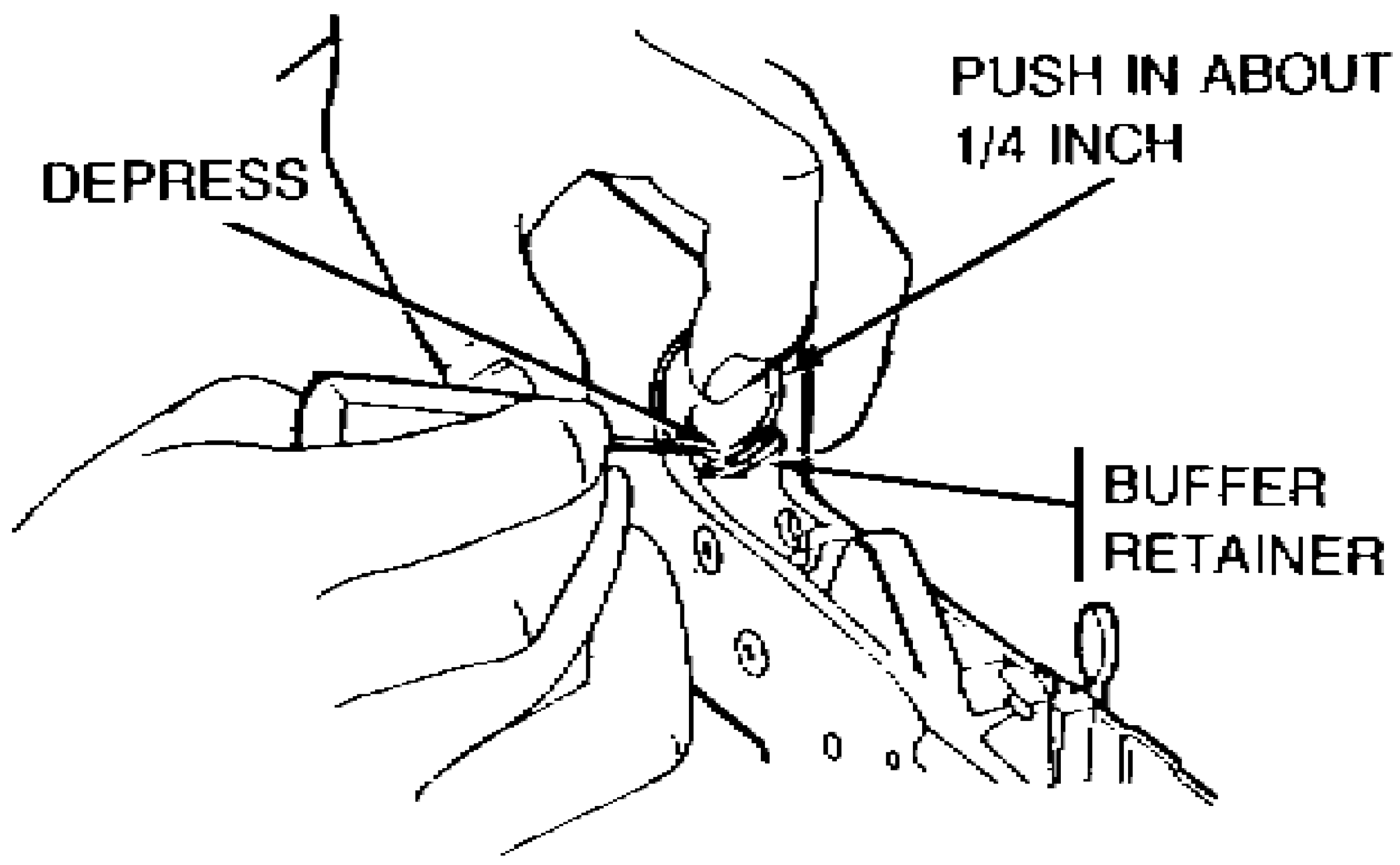
Be sure to hold cupped hand in front of detent and helical spring to prevent loss of detent and spring.



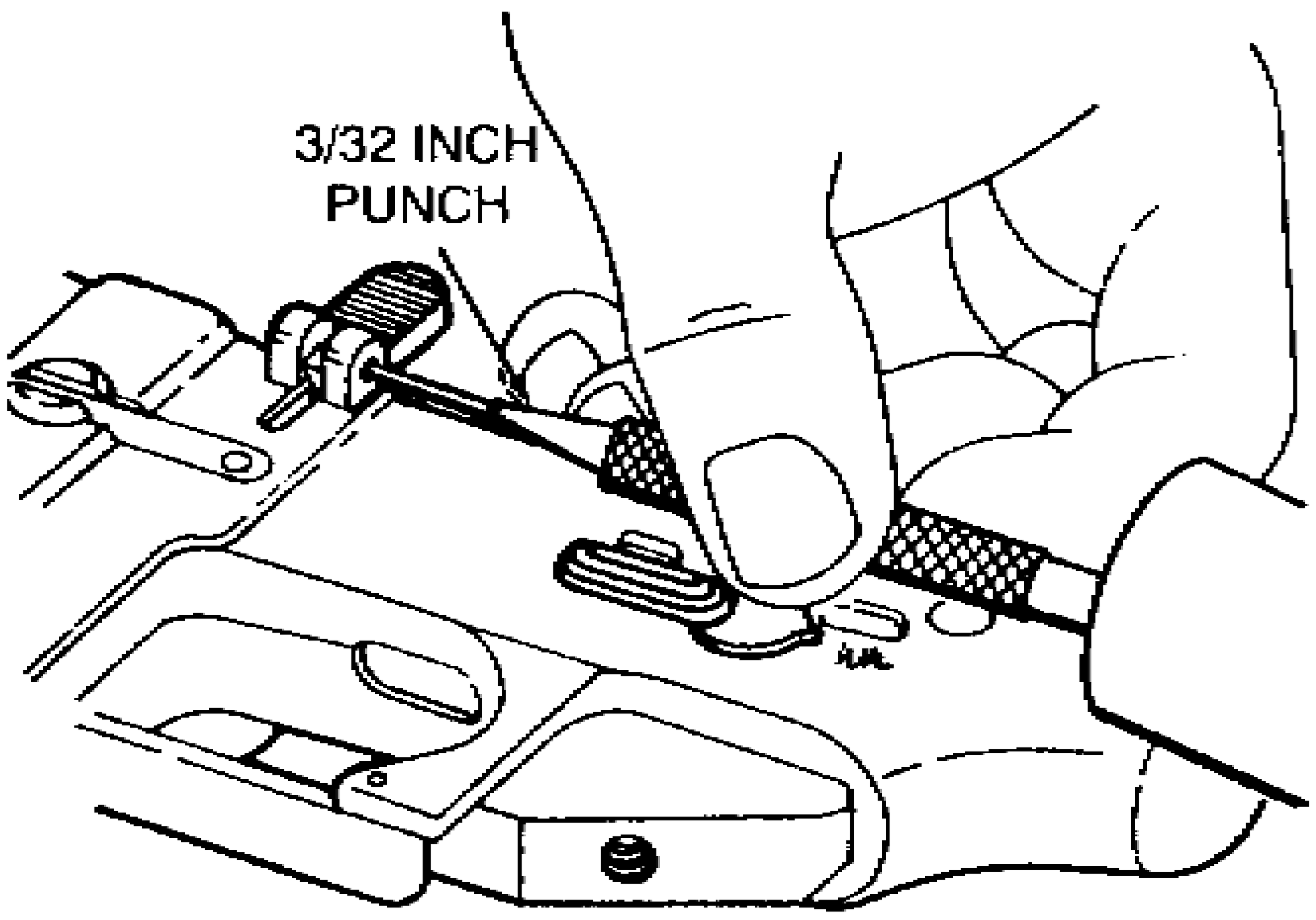
g. Buffer assembly (14) and action spring (15)

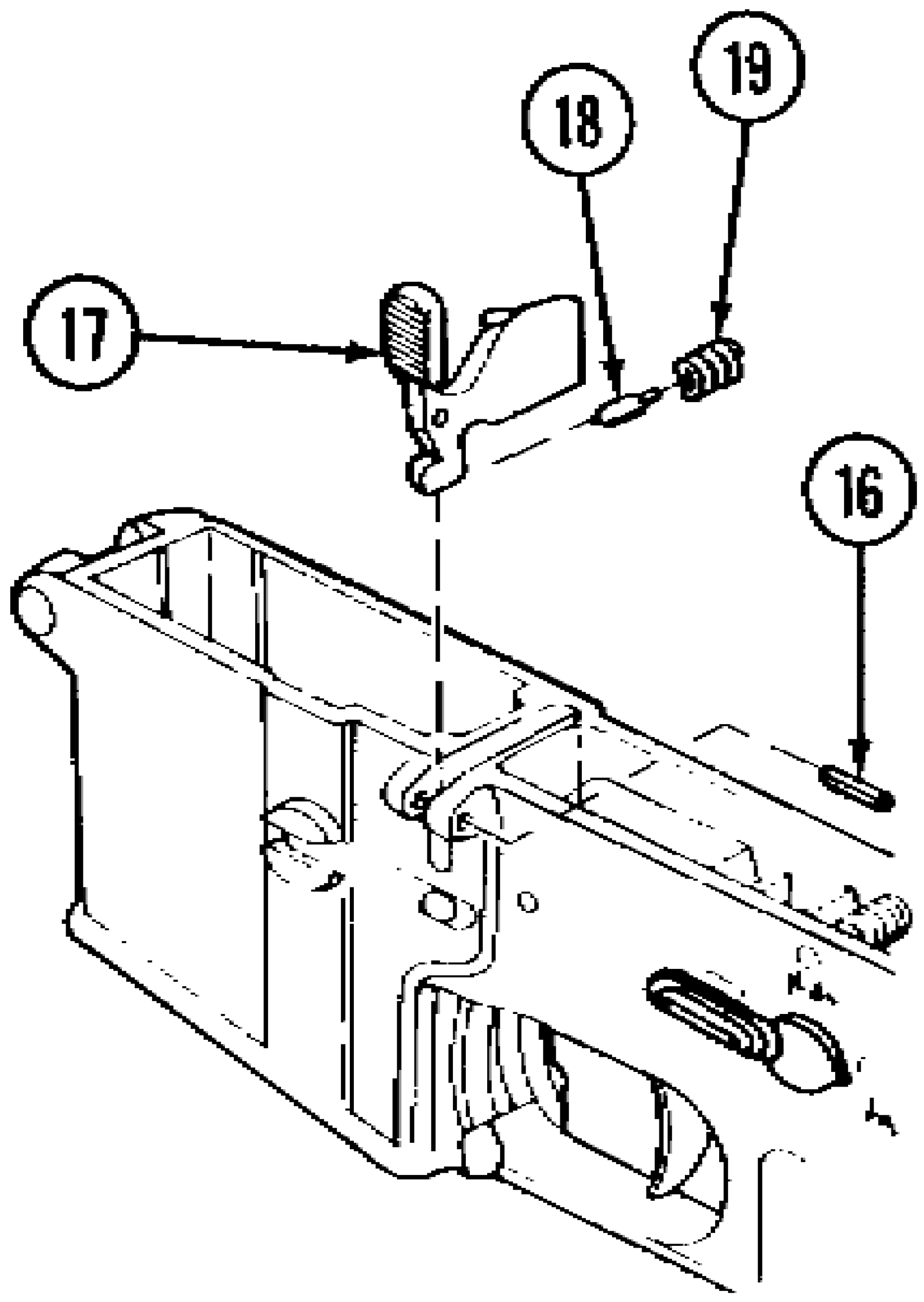
Press buffer assembly in. Using screwdriver, depress buffer retainer and release buffer and action spring.



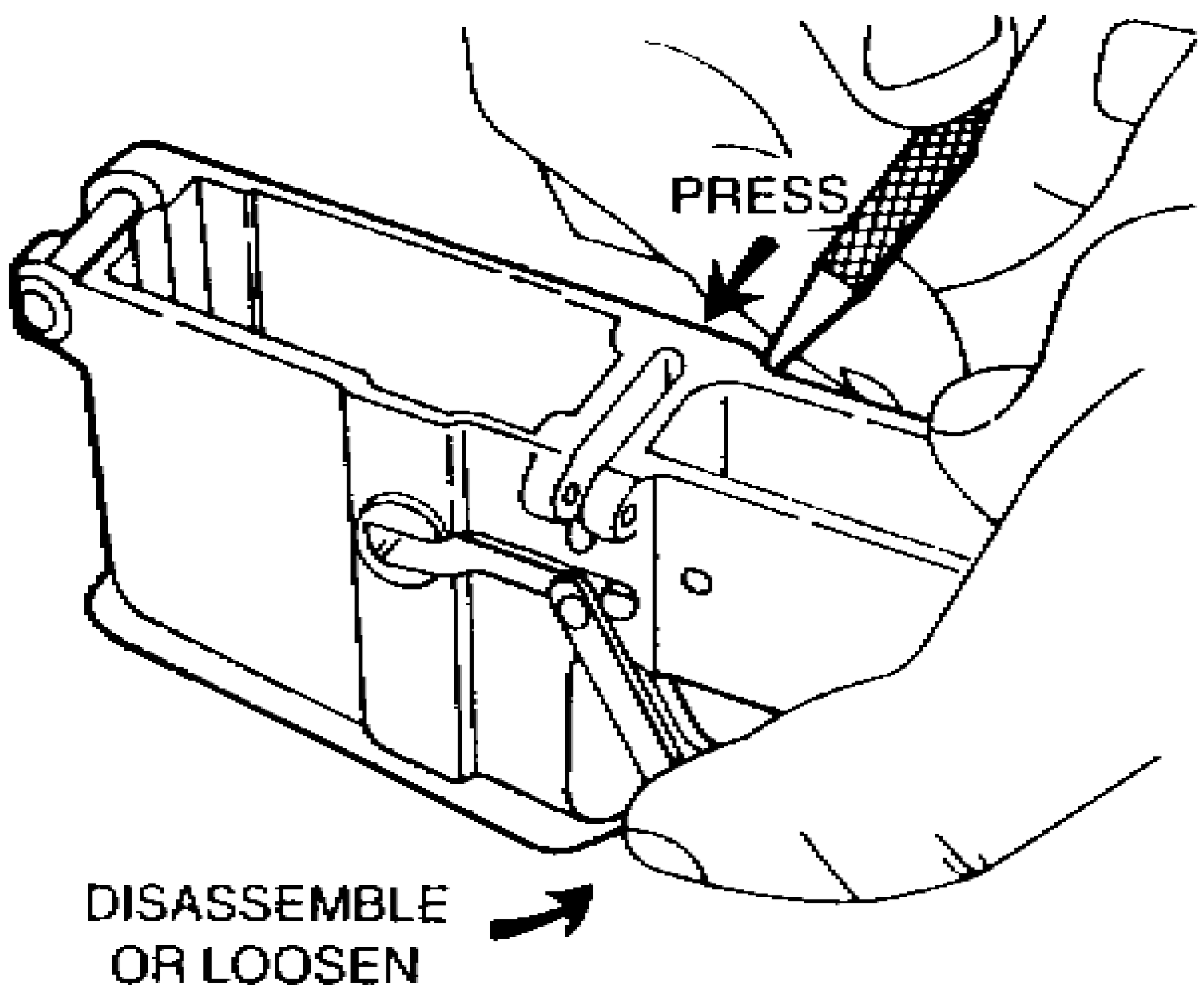


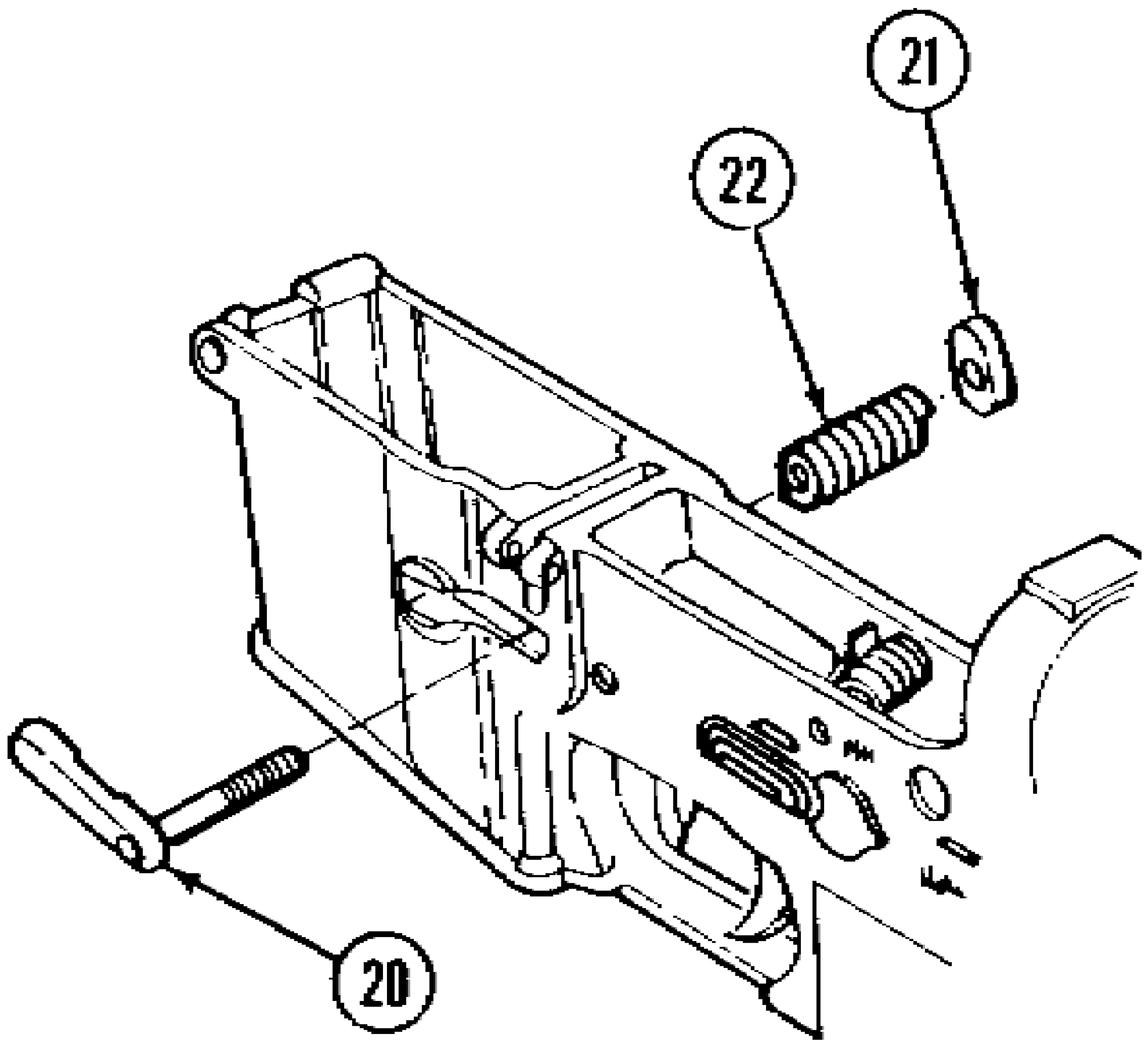
LOCATION	ITEM	ACTION	REMARKS
	h. Spring pin (16)	Remove using 3/32 inch drive pin punch and hand hammer.	
	i. Bolt catch (17), bolt catch plunger (18), and helical spring (19)	Remove.	





LOCATION	ITEM	ACTION	REMARKS
	j. Magazine catch (20)	Remove. Using drive pin punch, press in on magazine button (21) and turn magazine catch counterclockwise to unscrew.	
	k. Magazine button (21) and helical spring (22)	Remove.	



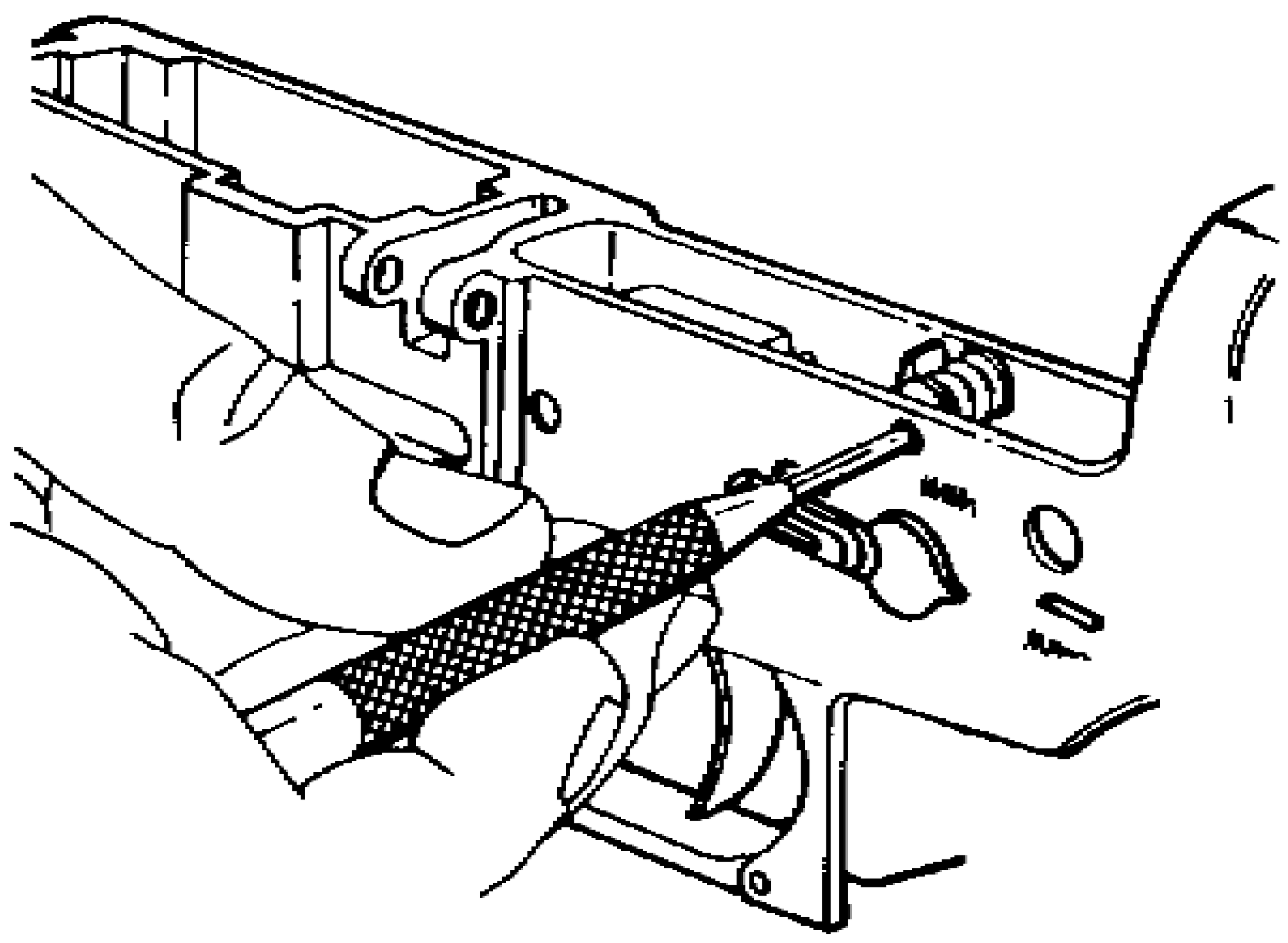


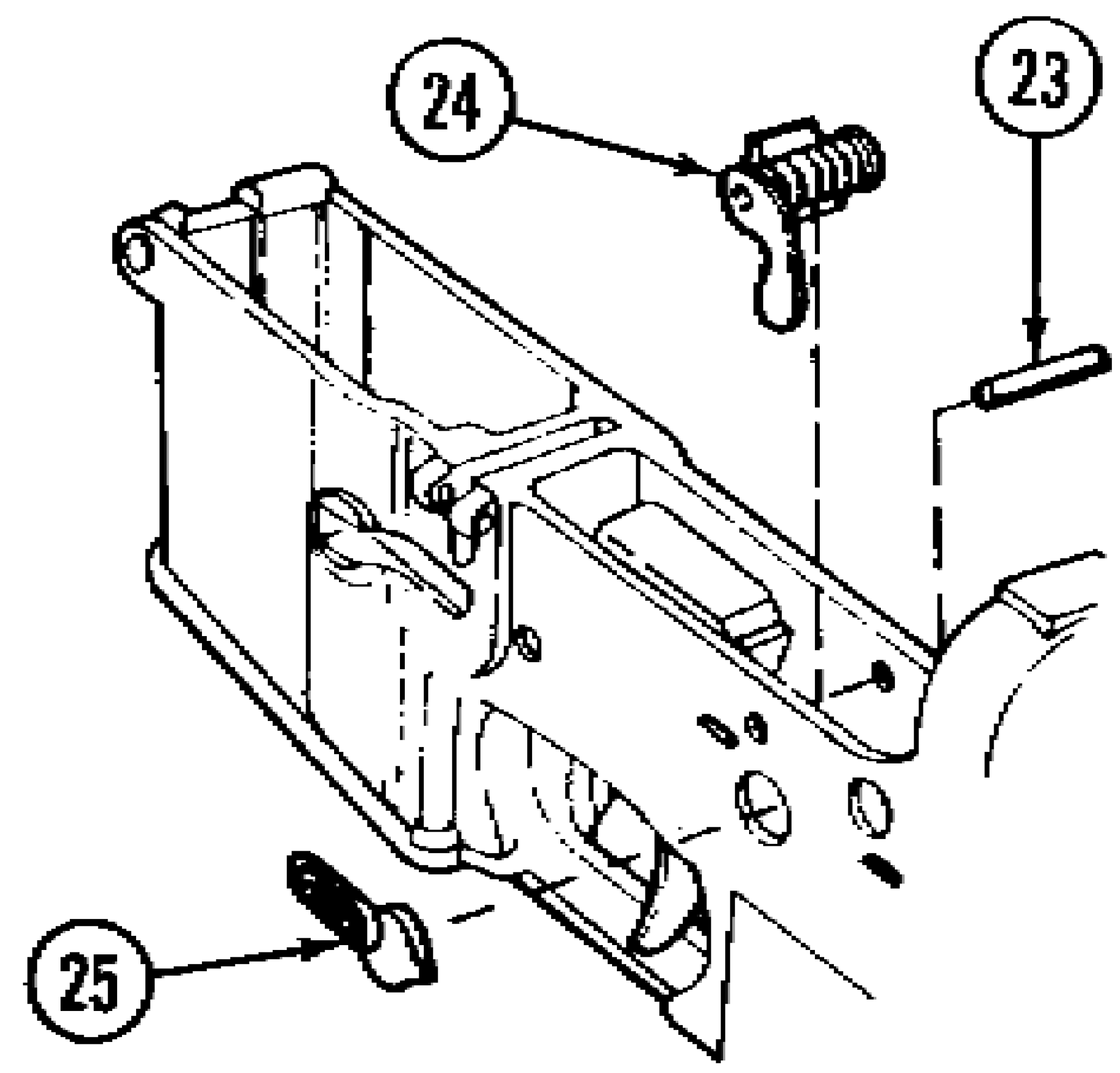
3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

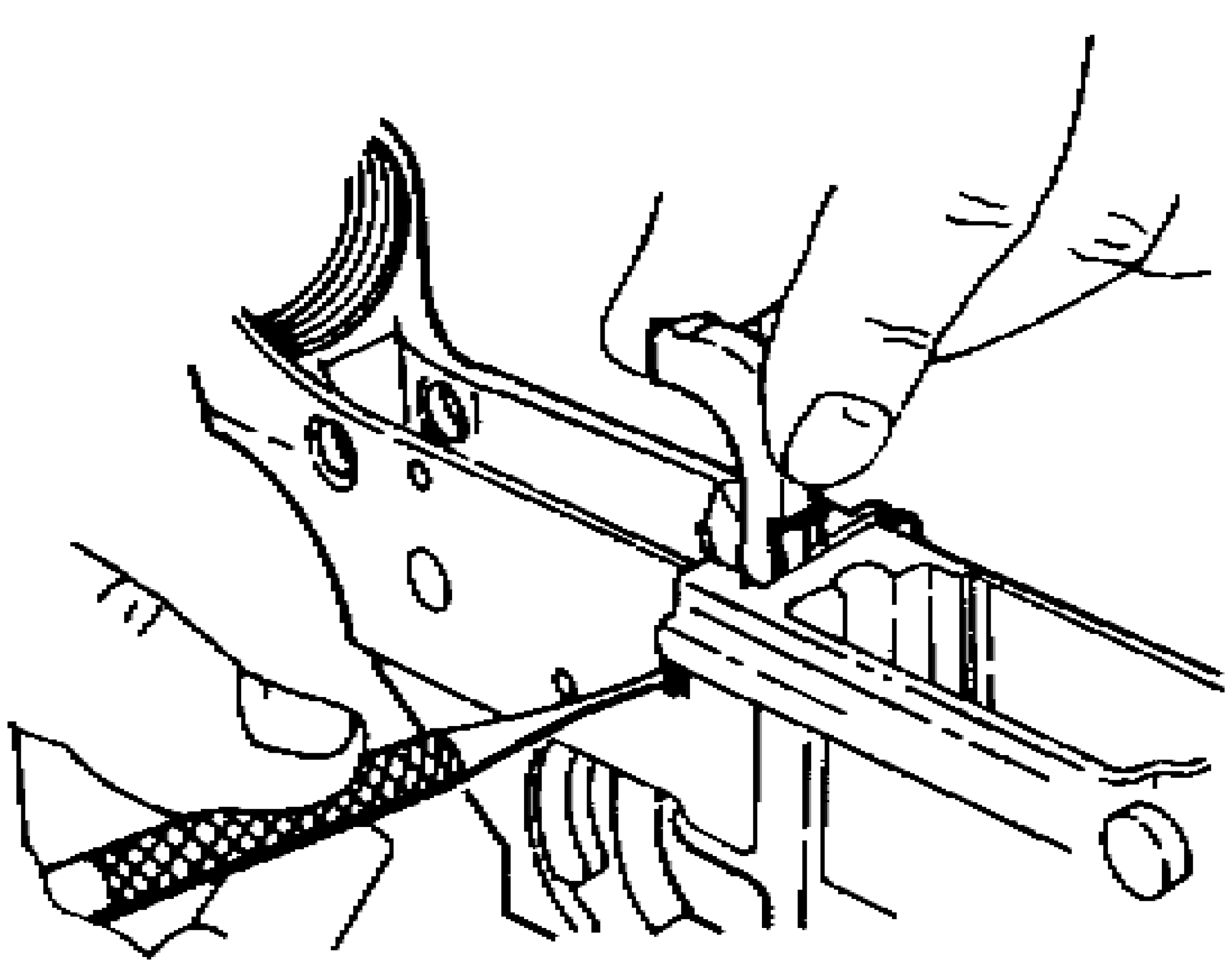
DISASSEMBLY (CONT)

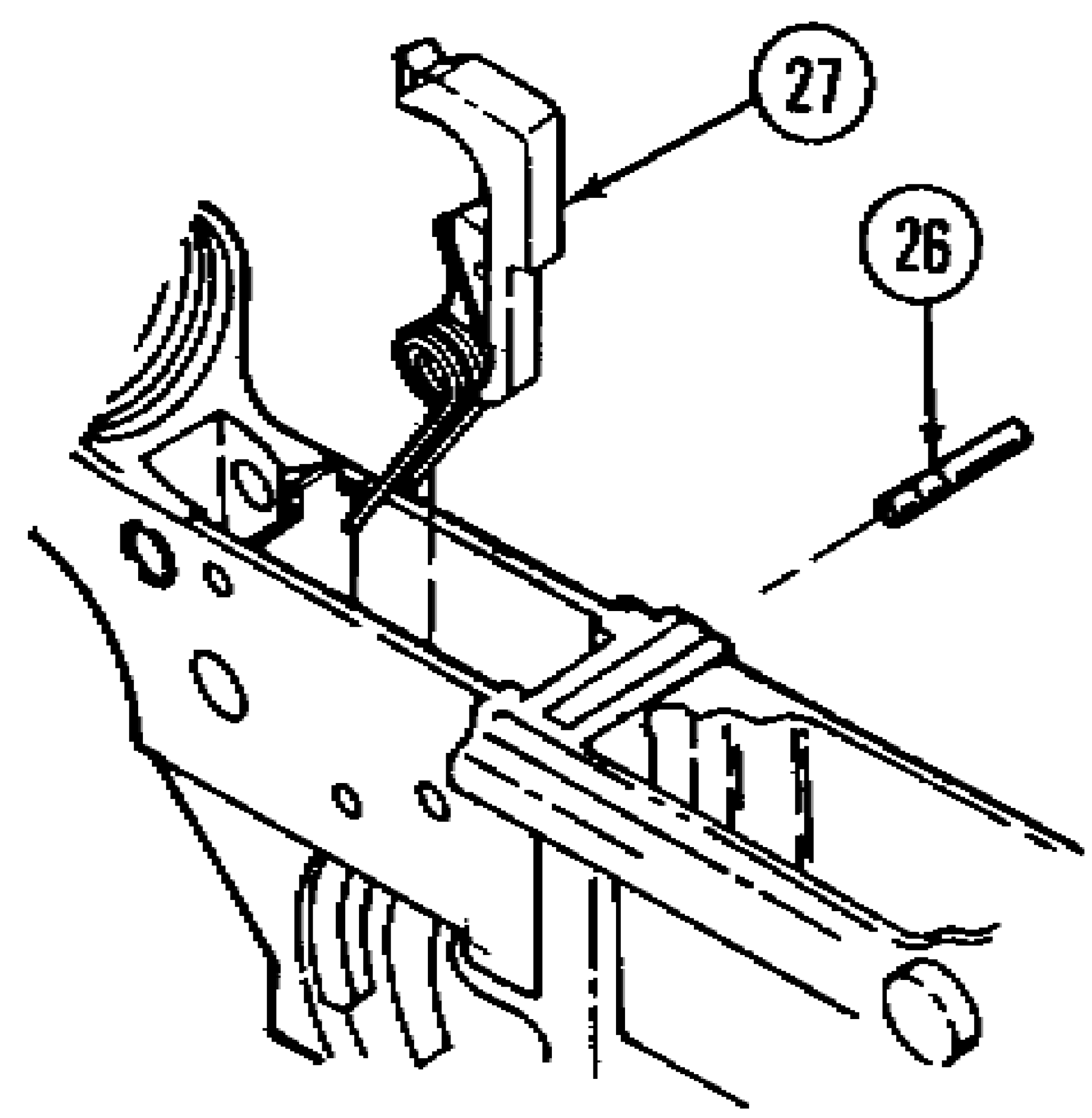
LOCATION	ITEM	ACTION	REMARKS
	l. Automatic sear pin (23)	Remove. Using drive pin punch, push automatic sear pin out of receiver.	To remove sear, safety selector lever must be positioned to automatic (if installed).
	m. Automatic sear (24) and selector lever (25)	Remove.	



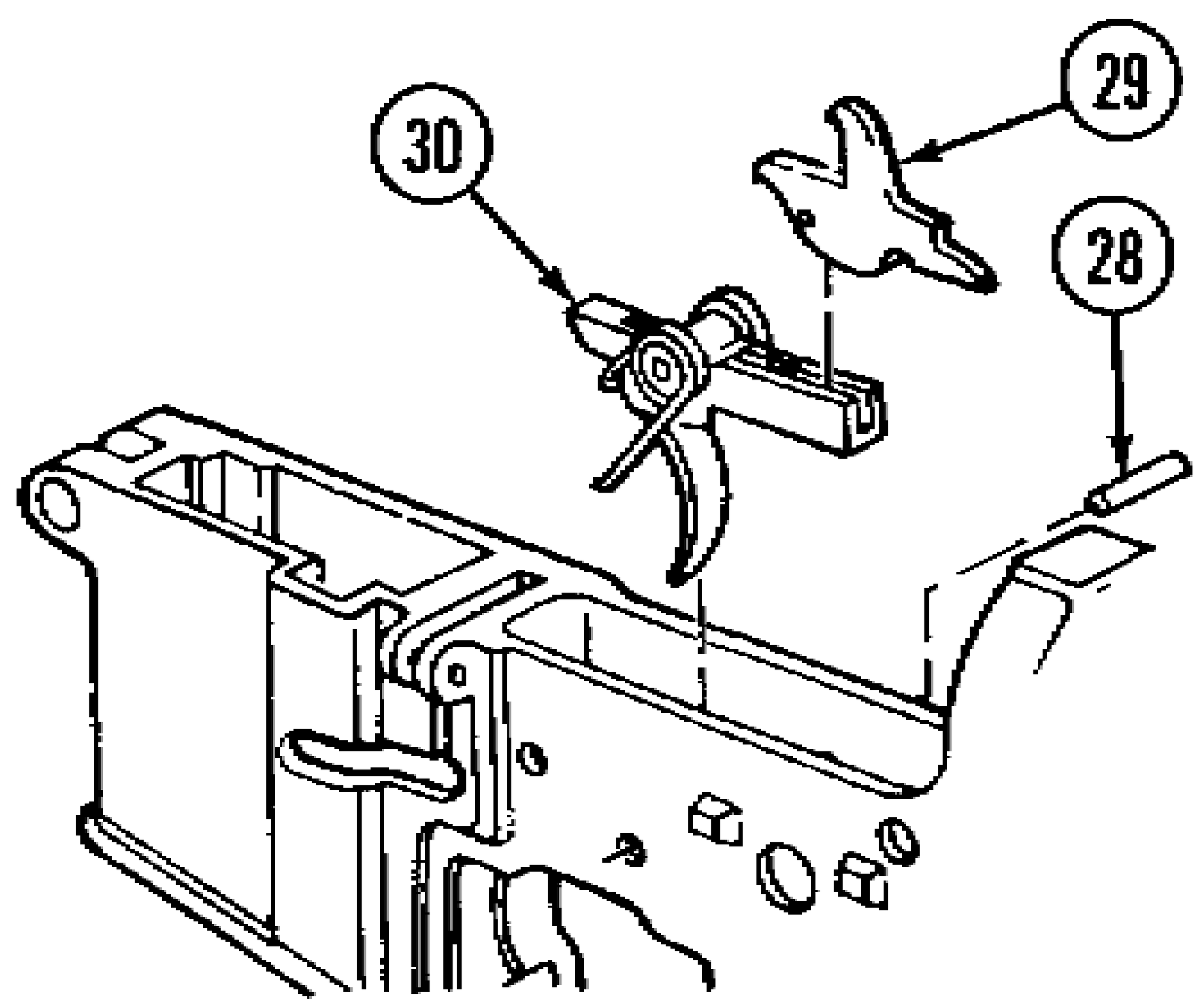


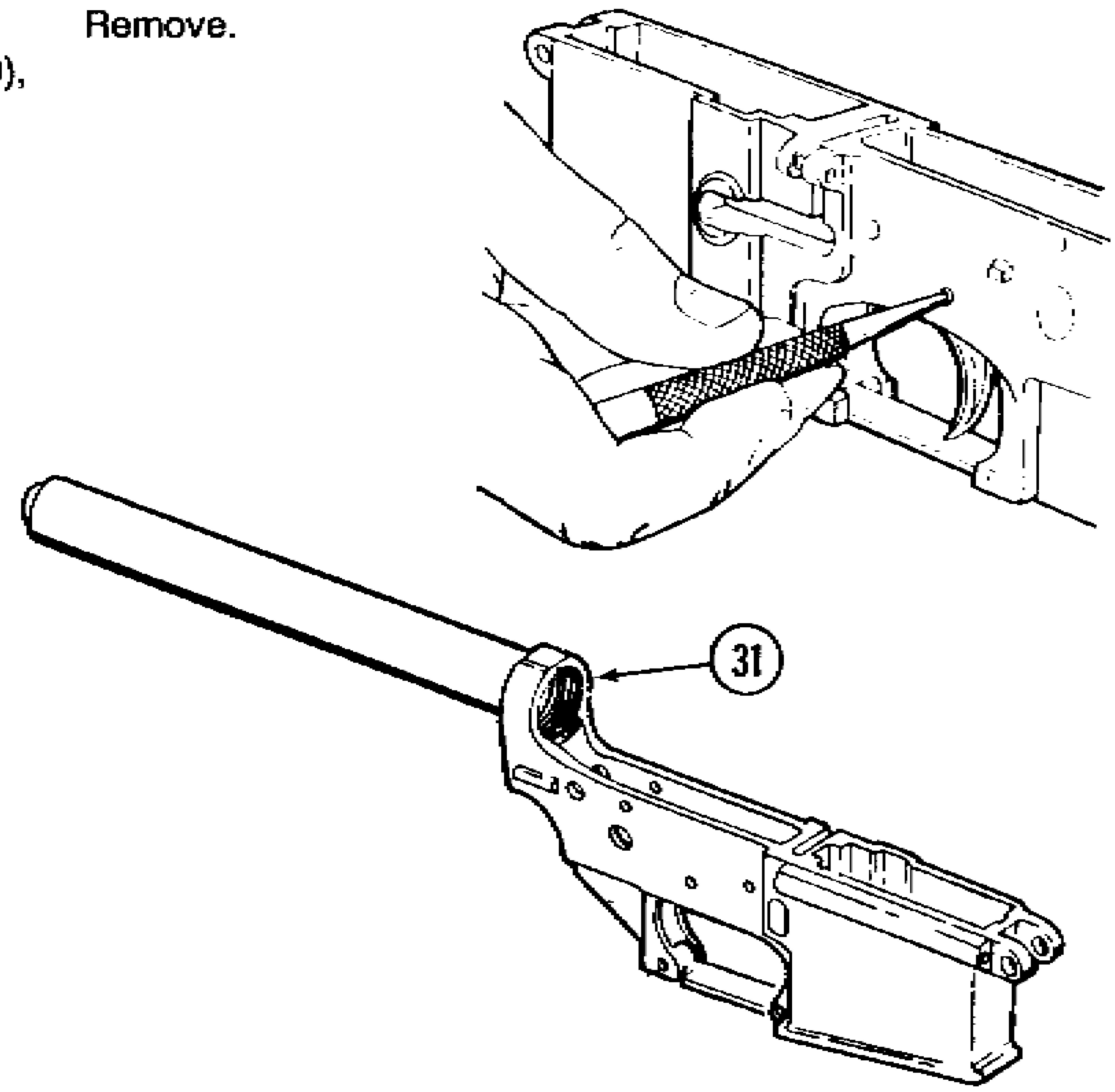
LOCATION	ITEM	ACTION	REMARKS
	n. Hammer and trigger pin (26)	Remove. Using drive pin punch, push pin from receiver.	To remove (hammer should be forward), place safety selector lever (if installed) to SEMI position.
	o. Hammer assembly (27)	Remove.	





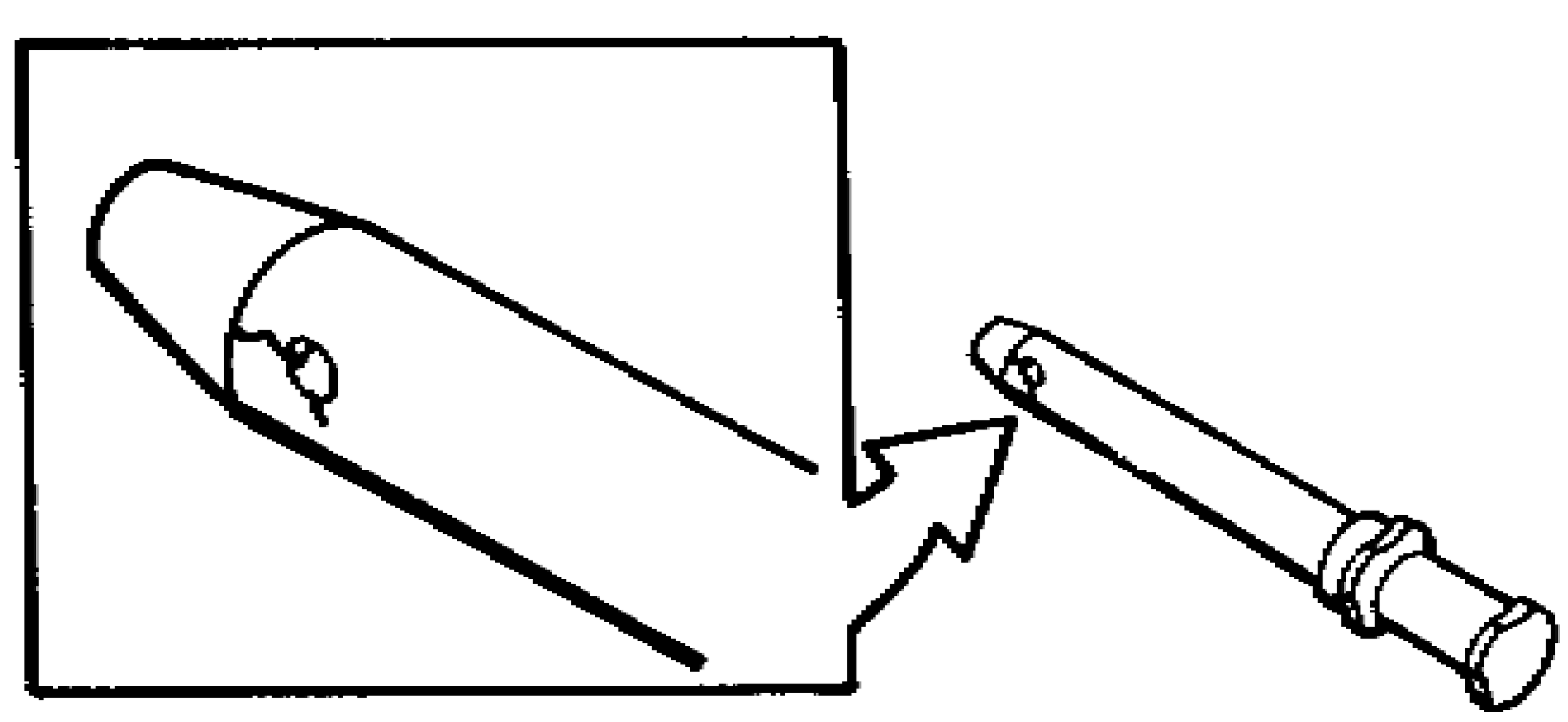
LOCATION	ITEM	ACTION	REMARKS
	p. Hammer and trigger pin (28)	Remove. Using drive pin punch, push from left side of receiver.	
	q. Disconnector (29), trigger assembly (30), and lower receiver and extension subassembly (31)	Remove.	





INSPECTION

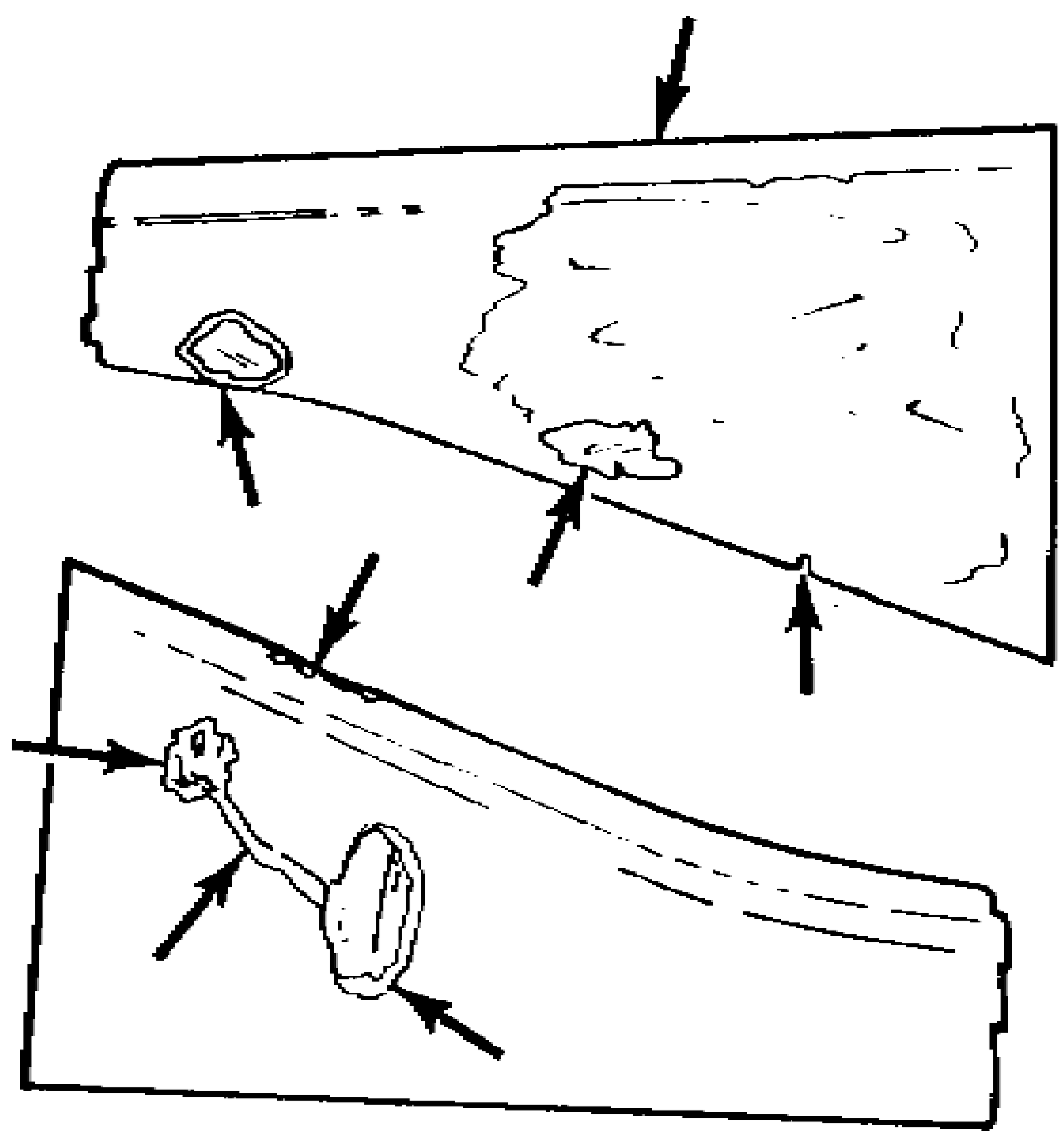
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	a. All parts	Inspect for cracks, corrosion, and mutilation which would affect functioning.	Small dents and gouges will not be cause for rejection.
	b. All parts	Inspect for damage.	
	c. Buffer assembly	The buffer assembly must not be cracked between hole and end of housing.	New buffers do not have hole in housing and are not likely to crack.



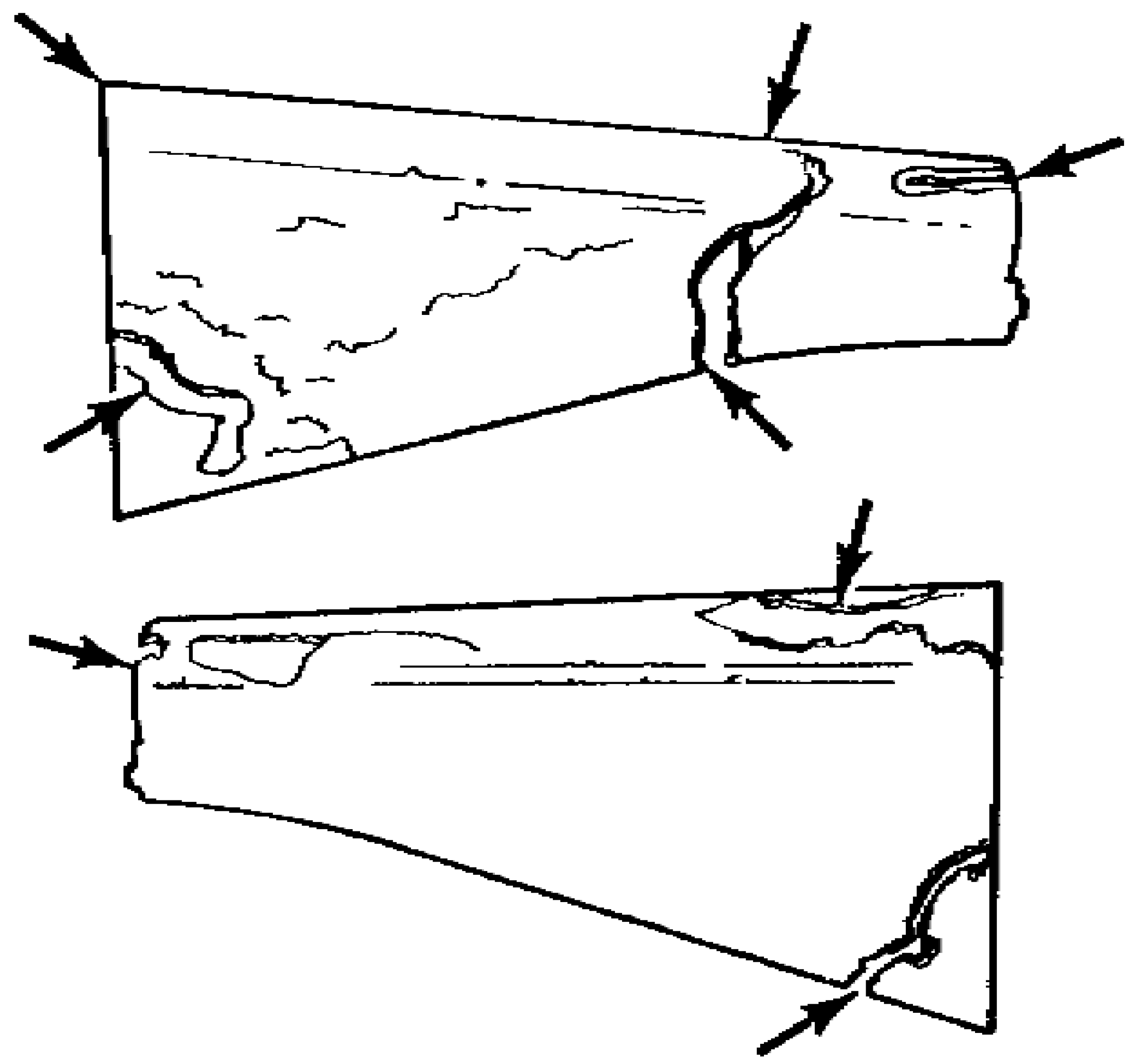
3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS
INSPECTION (CONT)			
	d. Helical spring	The free length of the helical spring must be between 11 3/4 minimum and 13 1/2 maximum inches.	
	e. Stock assembly	Inspect for breaks and separation of material which could prevent proper functioning of weapon.	Cracks or breaks in critical areas will be repaired or rejected. For stock repair, see TM 9-1005-301-30 w/C1.
		Inspect for dents, cracks, and chips.	Cracks in other than critical areas, not exceeding three inches in length and 1/16 inch in width, may be repaired.

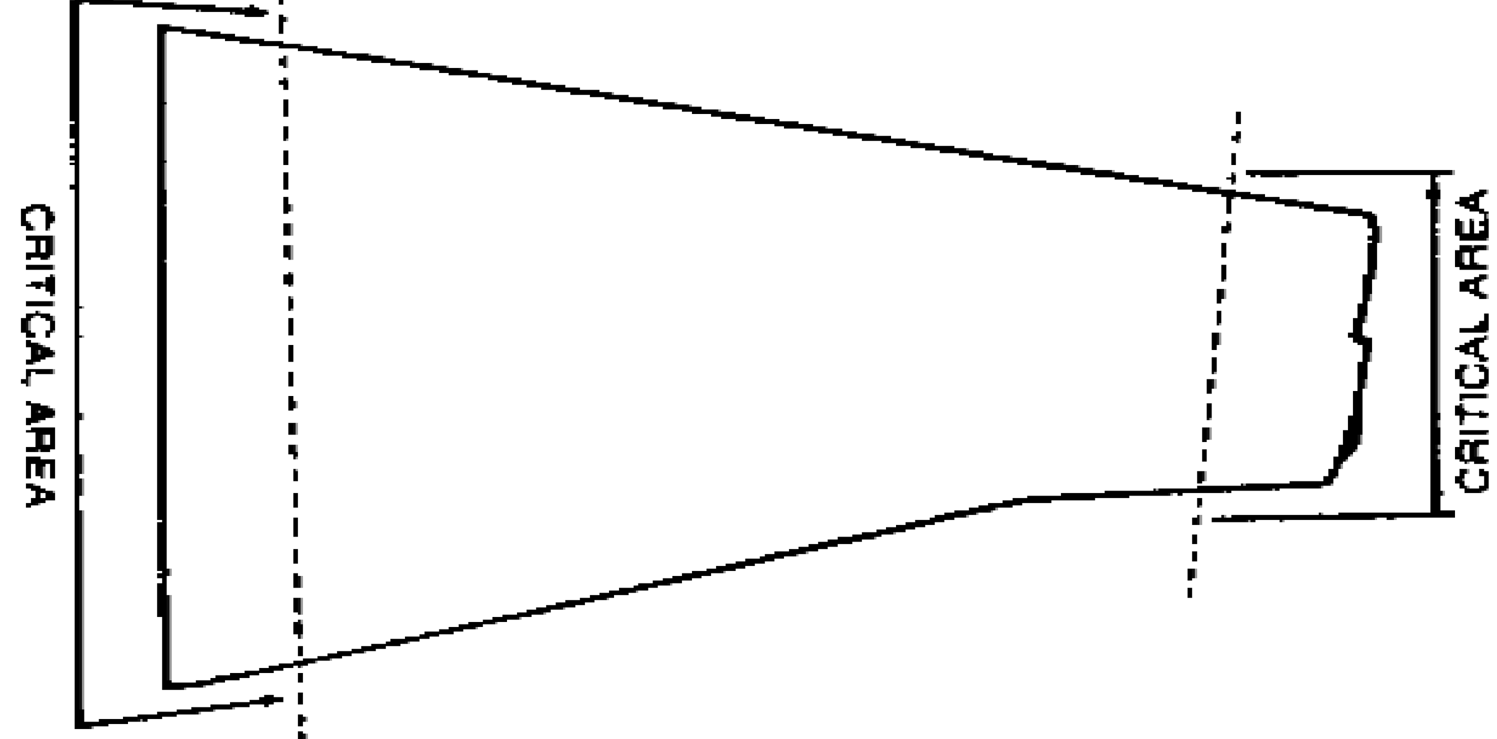




BUTTSTOCK - REPARABLE DAMAGED AREAS



BUTTSTOCK - NONREPARABLE DAMAGE



LOCATION	ITEM	ACTION	REMARKS

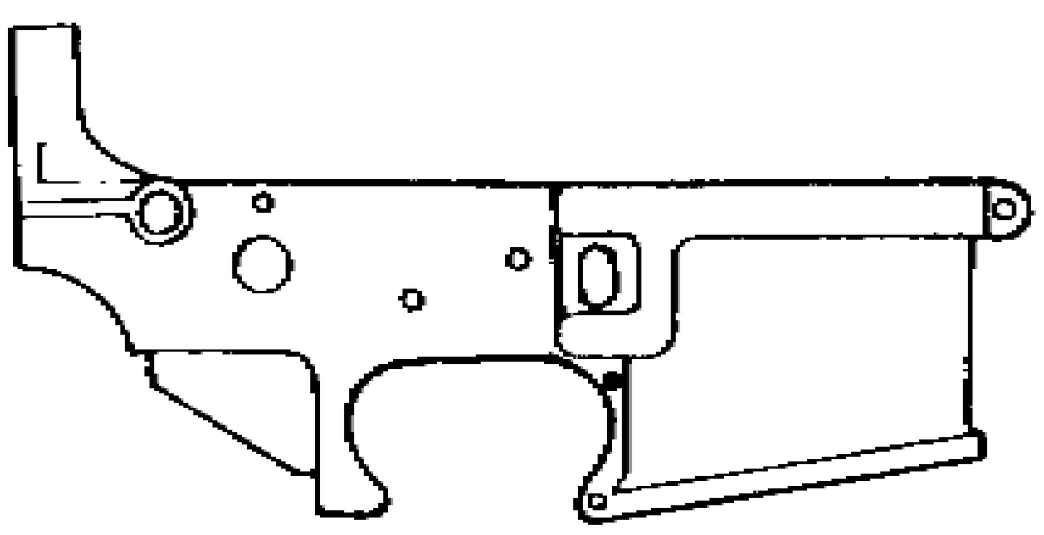
WARNING

When using solid film lubricant (item 13, app D) or dichloromethane (item 8, app D), be sure the area is well ventilated.

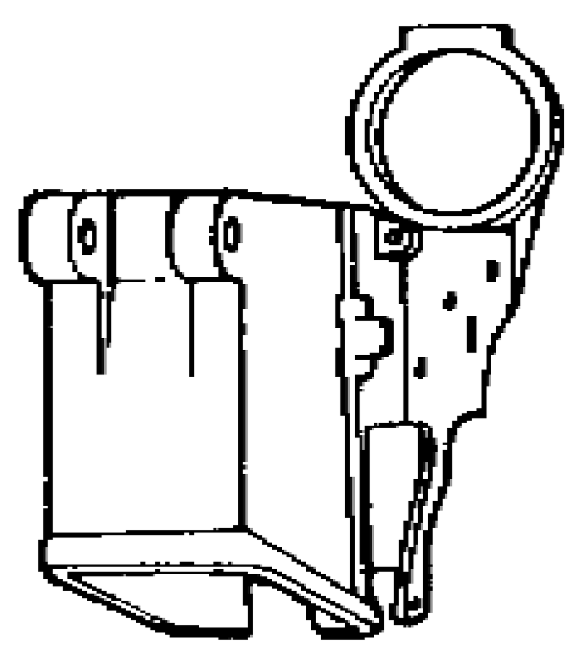
NOTE

Apply solid film lubricant (item 13, app D) to shiny surfaces.

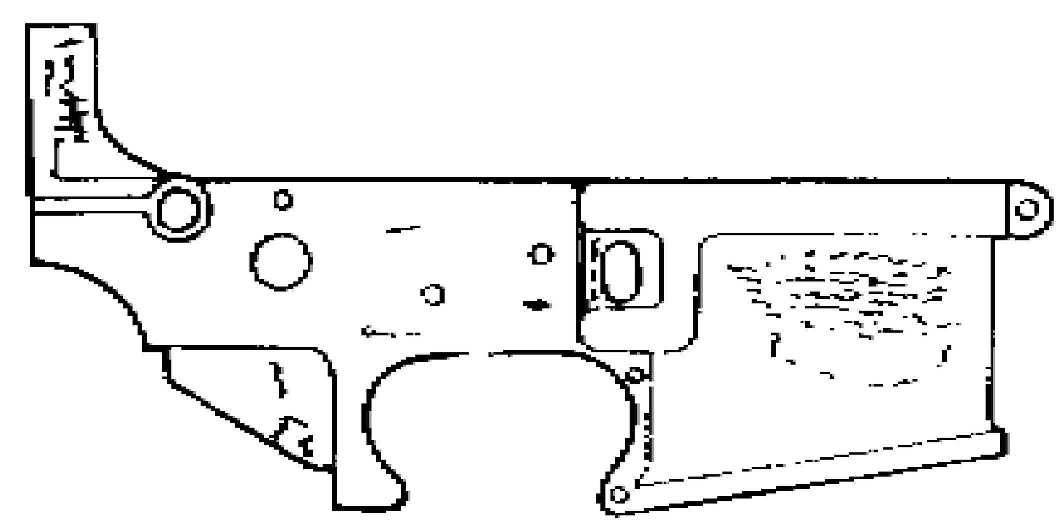
LOCATION	ITEM	ACTION	REMARKS
	f. Lower receiver and extension subassembly	Inspect for corrosion in the lower receiver lobes of the pivot area or hinge pin area. If extensive corrosion appears in these areas, the receiver will not be repaired and rifle will be turned in for replacement.	Refer to page 3-29 for repair of corroded surfaces.



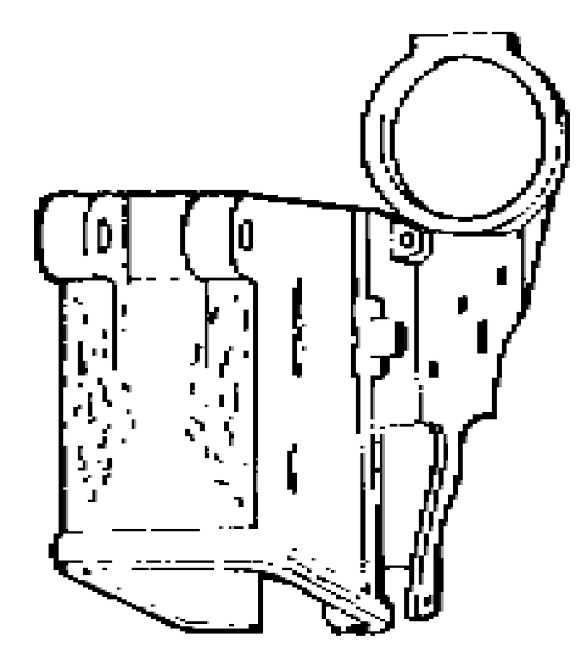
A - SHINY SURFACES (REPARABLE)



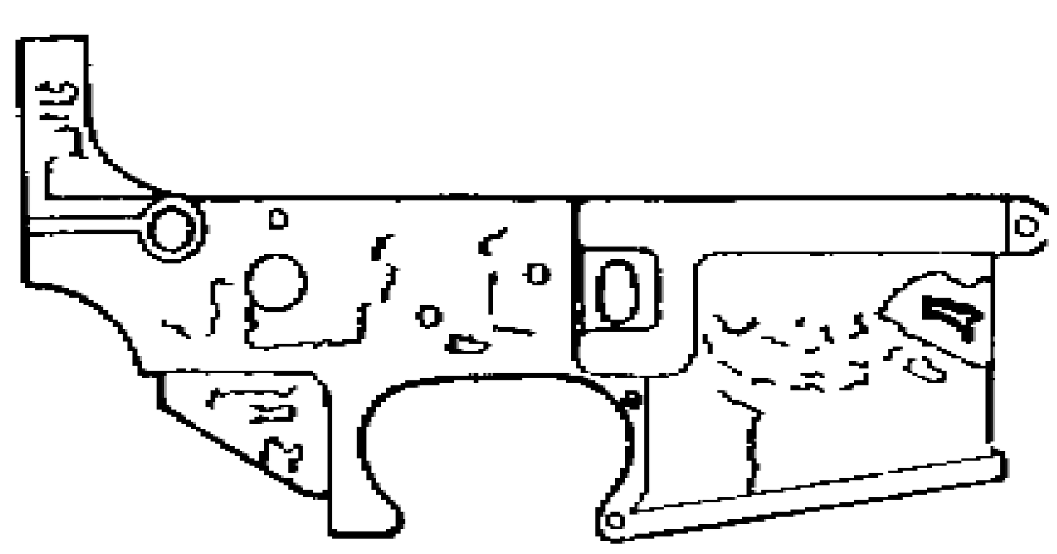
A - SHINY SURFACES (REPARABLE)



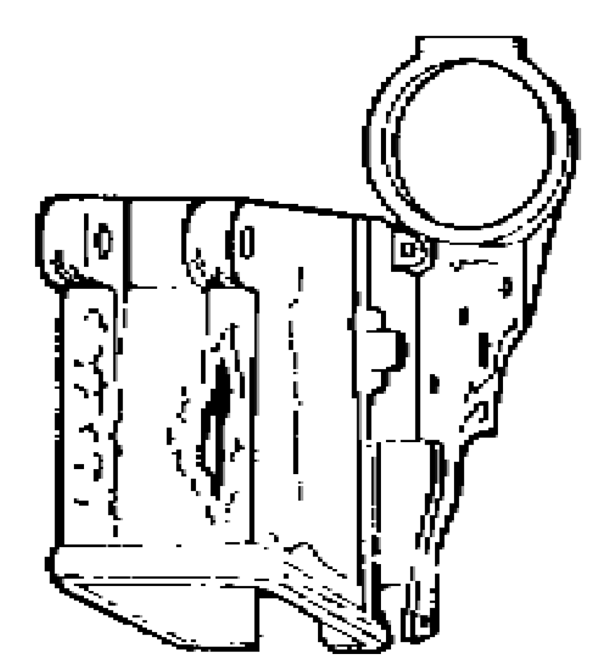
B - CORRODED AND NO HOLES (REPARABLE)



B - CORRODED (REPARABLE)



C - CORRODED WITH HOLE (NONREPARABLE)



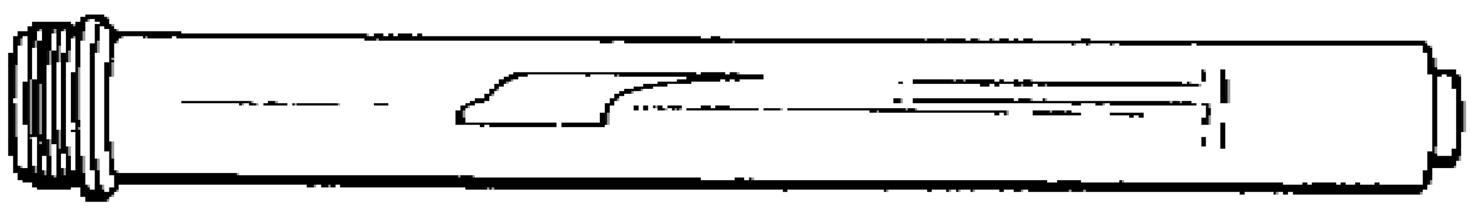
C - CORRODED LOBES - WEAKENING PIVOT PIN AREA (NONREPARABLE)

3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

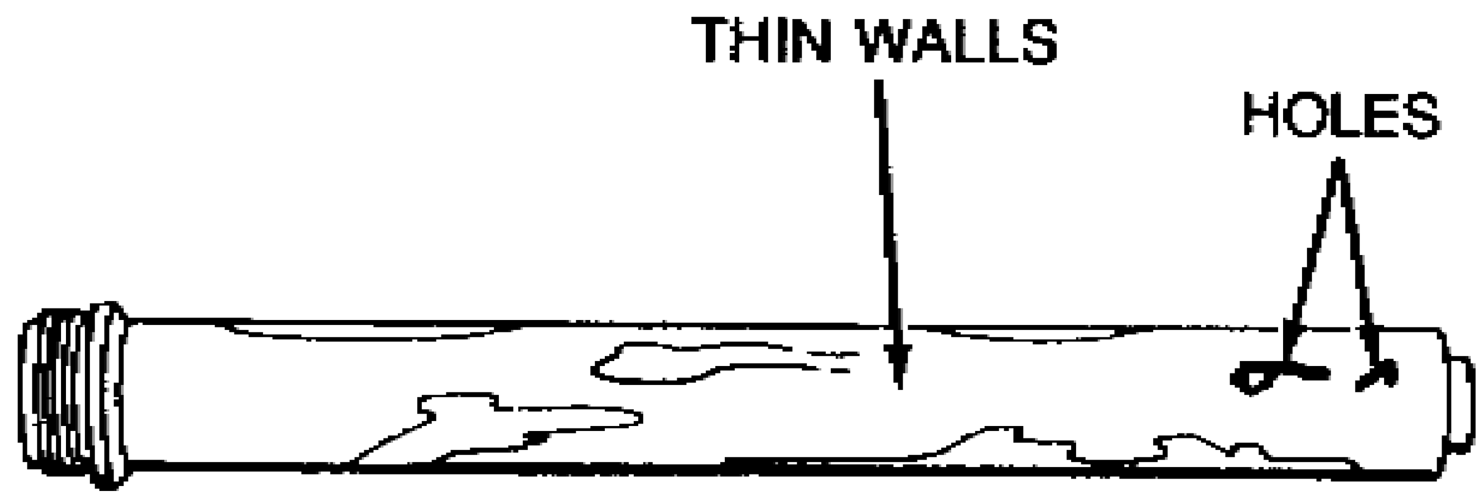
LOCATION	ITEM	ACTION	REMARKS

INSPECTION (CONT)

Inspect for corrosion. Repair or replace if defective.


A - SHINY SURFACES (REPARABLE)


B - CORRODED (REPARABLE)



C - HOLES AND THIN WALLS (NONREPARABLE)

REPAIR

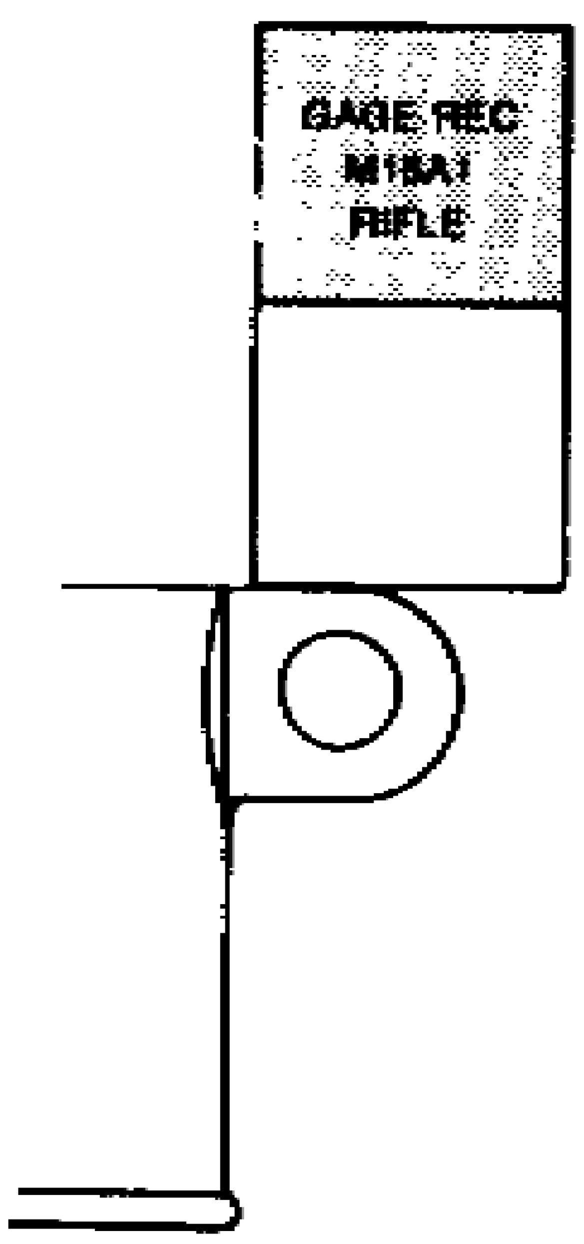
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	All parts	Repair or replace if defective.	For stock repair, see TM 9-1005-301-30 w/C1.

TEST

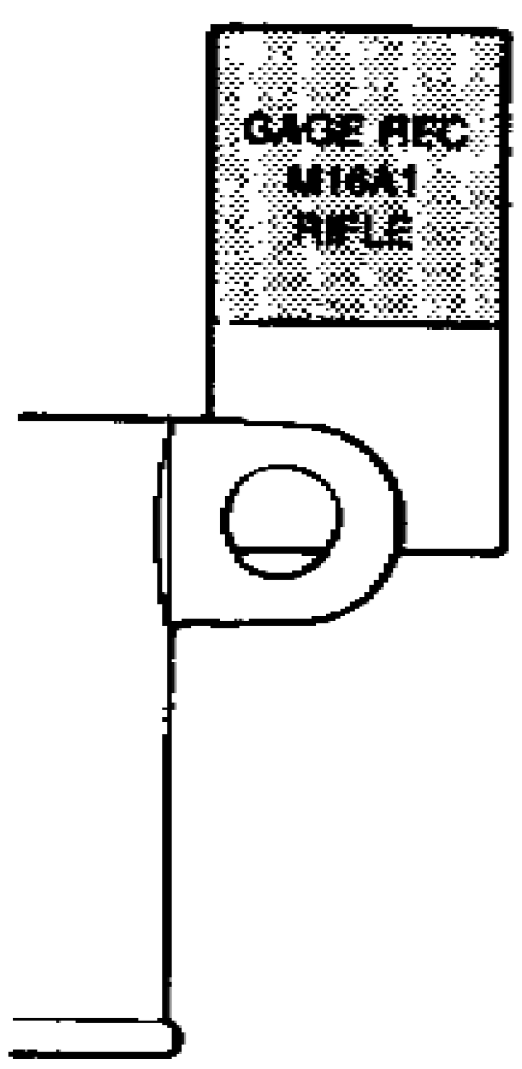
LOCATION	ITEM	ACTION	REMARKS
Weapon	Lower receiver and extension assembly	Test lower receiver pivot pin lug clearance using fabricated lower receiver go-no go gage (E-5, app E).	Do not force gage to fit between pivot pin lugs.

If lower receiver go-no go gage (E-5, app E) enters far enough to pass or cover the entire pivot hole, the rifle is unserviceable and will be turned in for replacement.

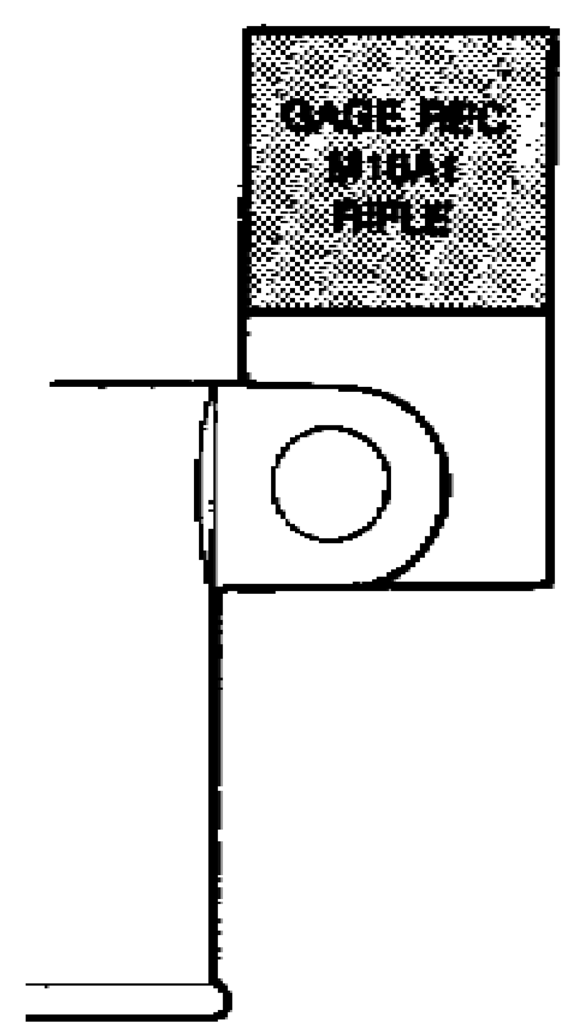
If lower receiver go-no go gage (E-5, app E) does not enter or enters but does not pass or cover the entire pivot pin hole, the receiver is still serviceable in this condition.



A - SERVICEABLE

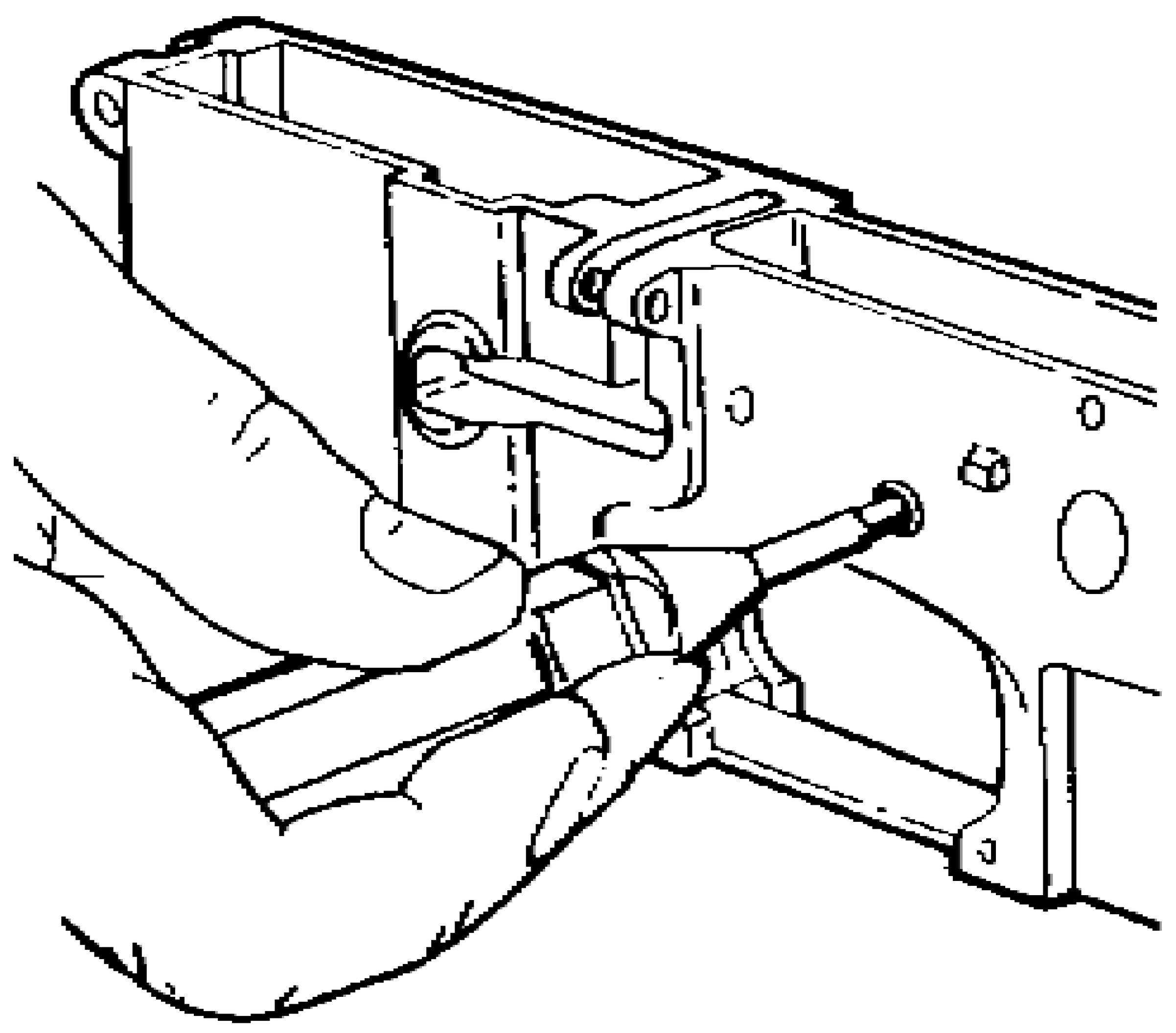


B - SERVICEABLE



C - UNSERVICEABLE

LOCATION	ITEM	ACTION	REMARKS
		Test two hammer pin holes and two trigger pin holes using not-go plug gage 12006472.	
		If the not-go plug gage passes through any one of the four pin holes, the rifle is unserviceable and will be turned in for replacement. The gage must penetrate through the wall thickness to be unserviceable.	



REASSEMBLY

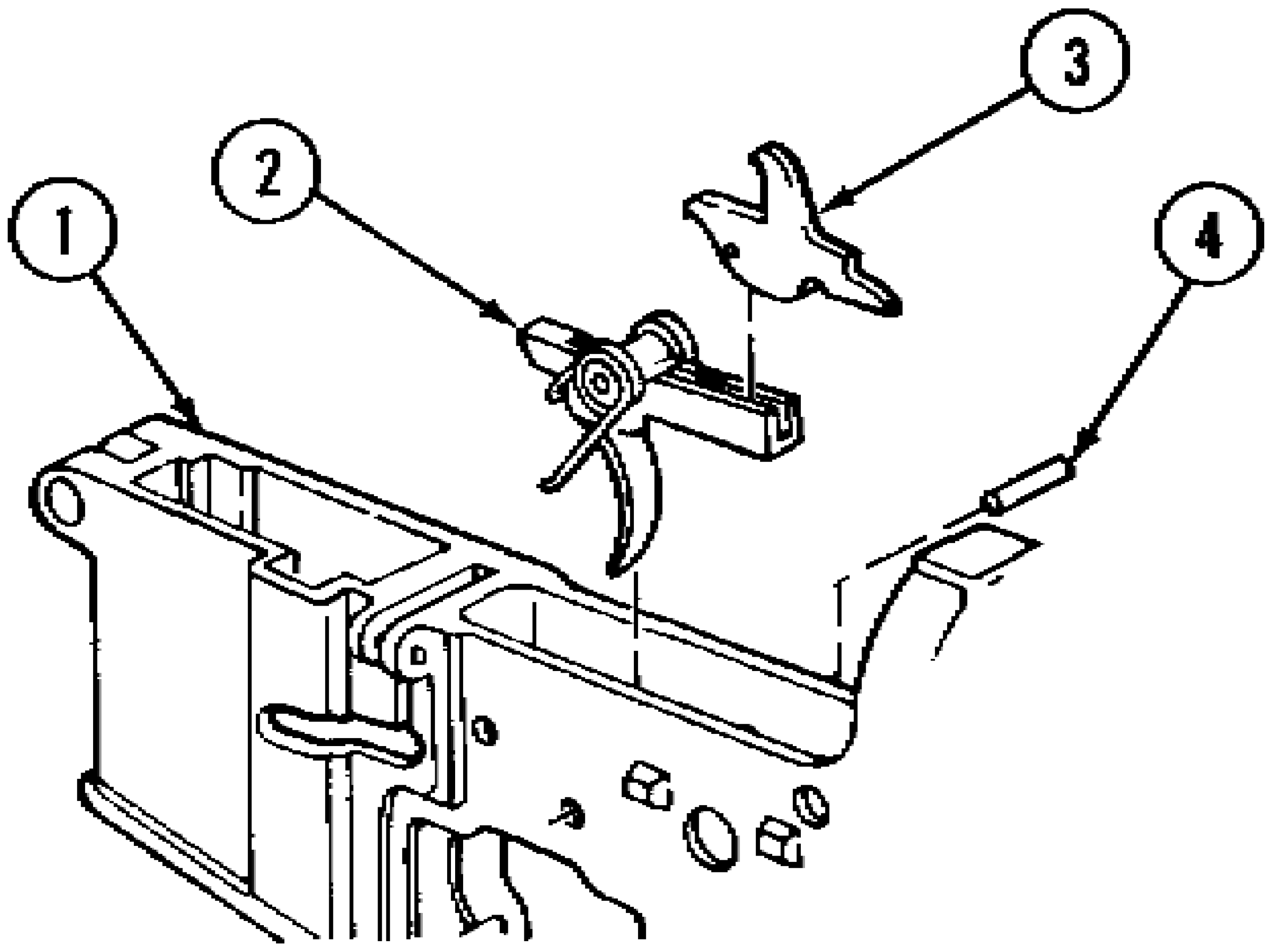
WARNING

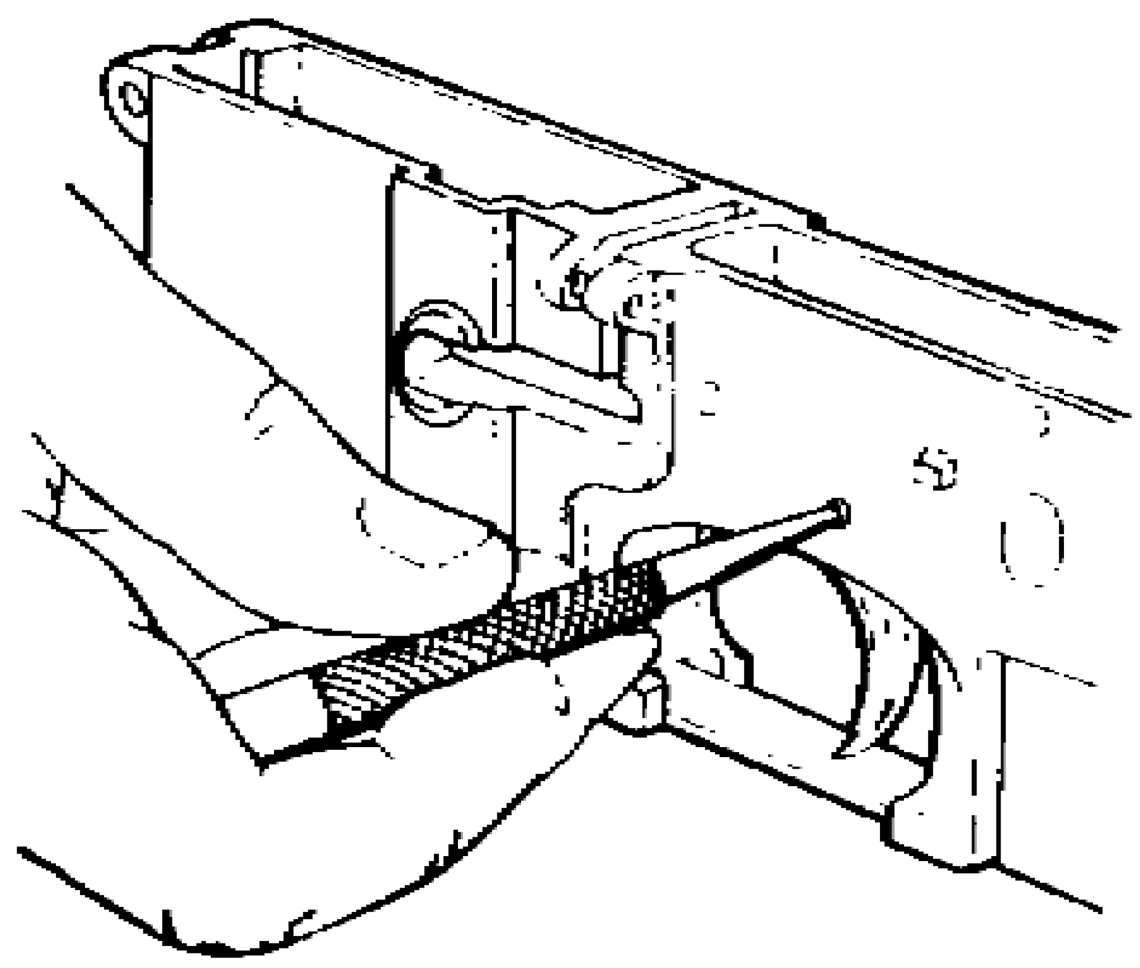
When using solid film lubricant (item 13, app D) or technical dichloromethane (item 8, app D), be sure the area is well ventilated.

NOTE

Before reassembling parts, clean them with technical dichloromethane (item 8, app D) and lubricate them with CLP (item 5, app D).

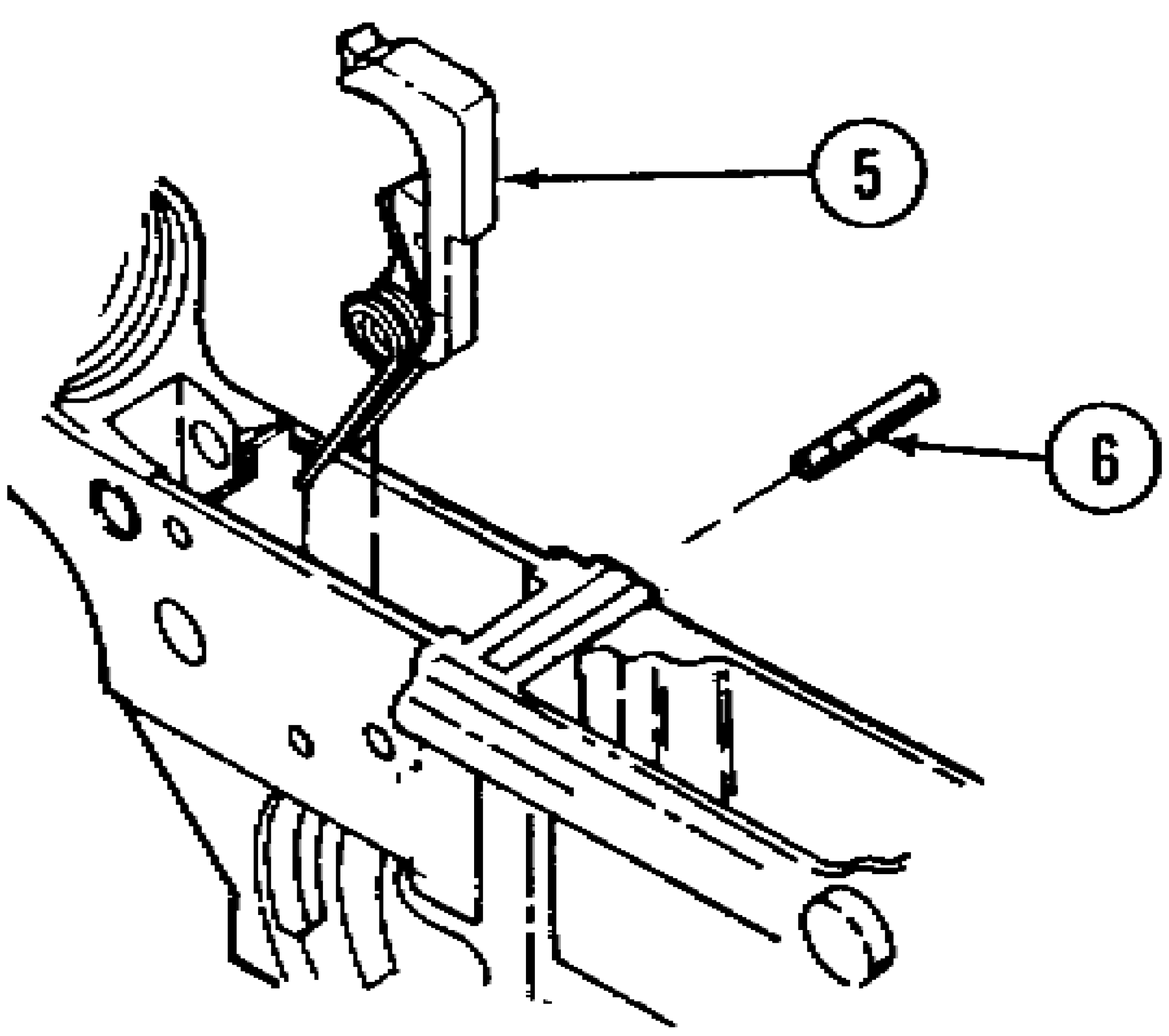
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	a. Lower receiver and extension subassembly (1), trigger assembly (2), and disconnector (3)	Install.	
	b. Hammer and trigger pin (4)	Install using drive pin punch. Push in until flush.	

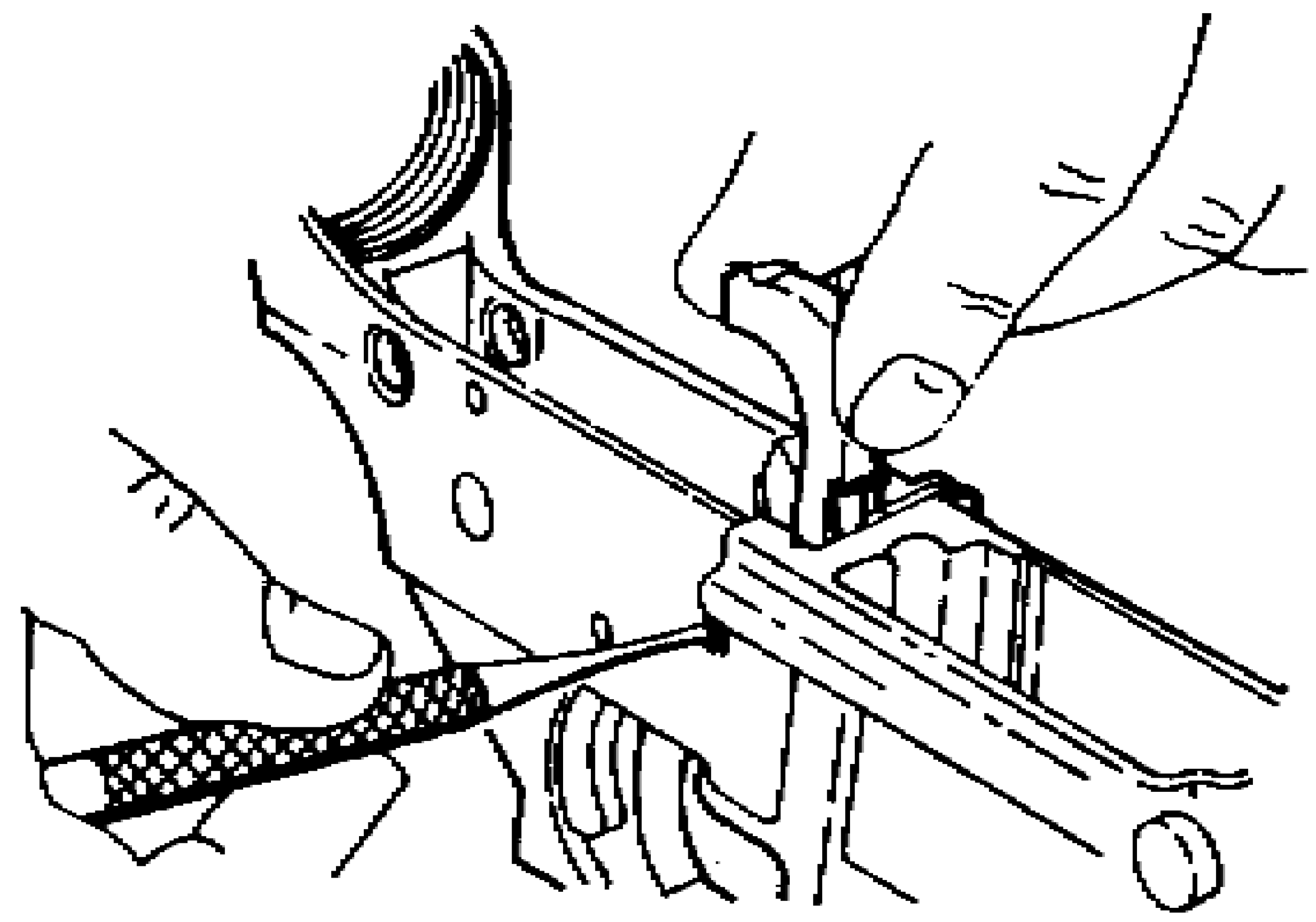




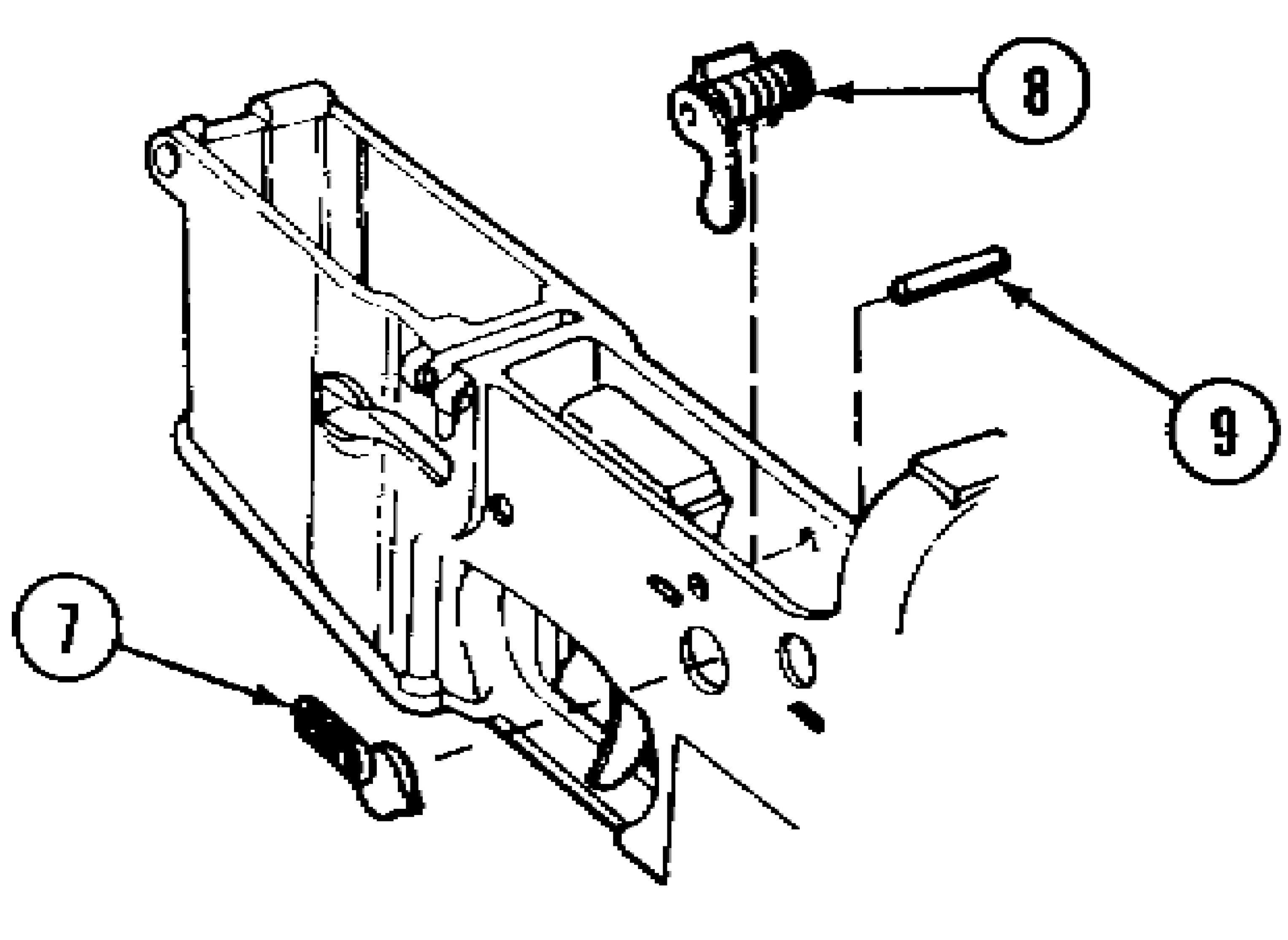
3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

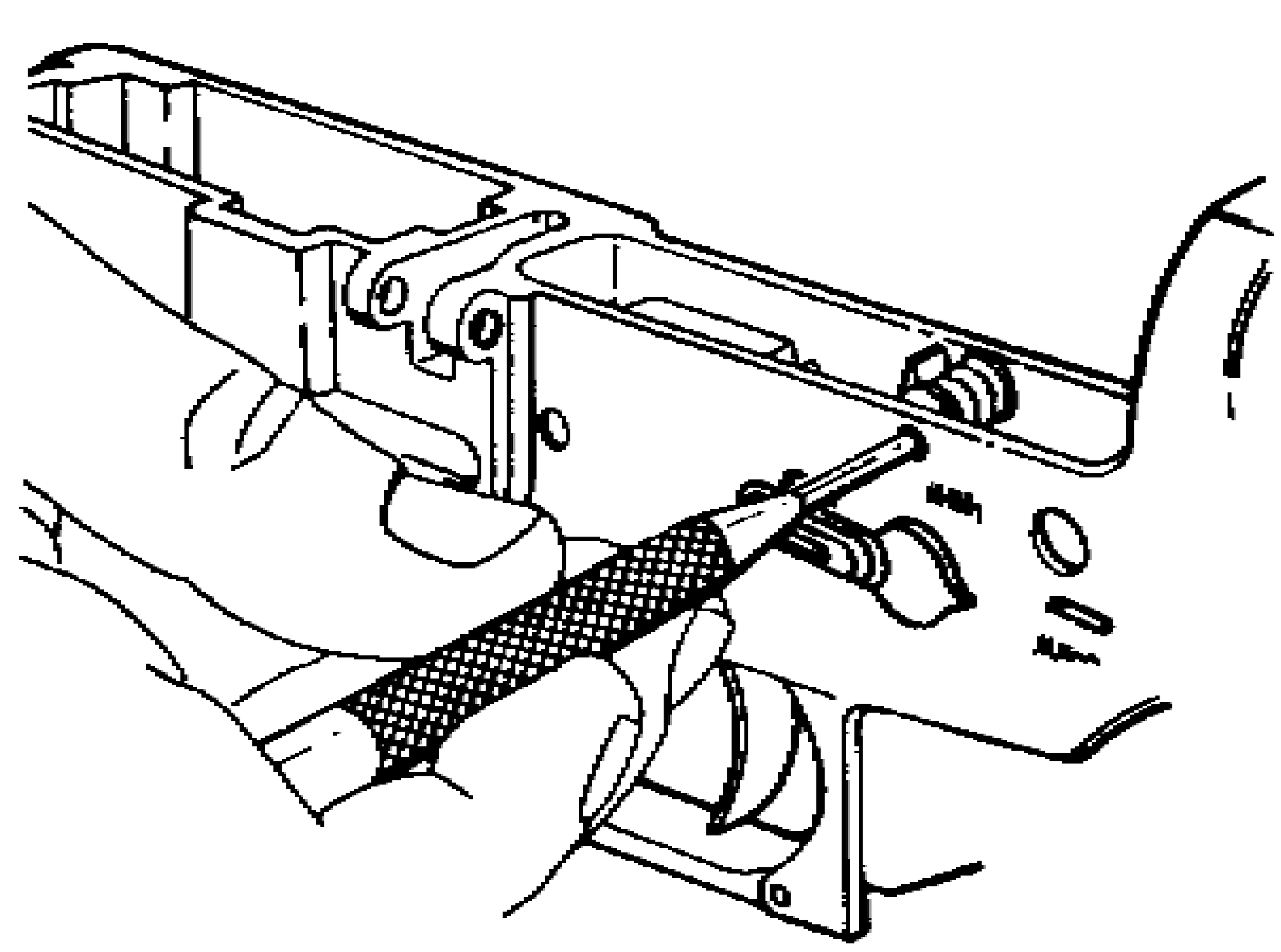
LOCATION	ITEM	ACTION	REMARKS
REASSEMBLY (CONT)			
	c. Hammer assembly (5)	Install.	
	d. Hammer and trigger pin (6)	Install using drive pin punch. Push in until flush.	Ends of hammer spring to be installed to rear of hammer and trigger pin (4), resting in the annular groove on upper surface of trigger pin (4).



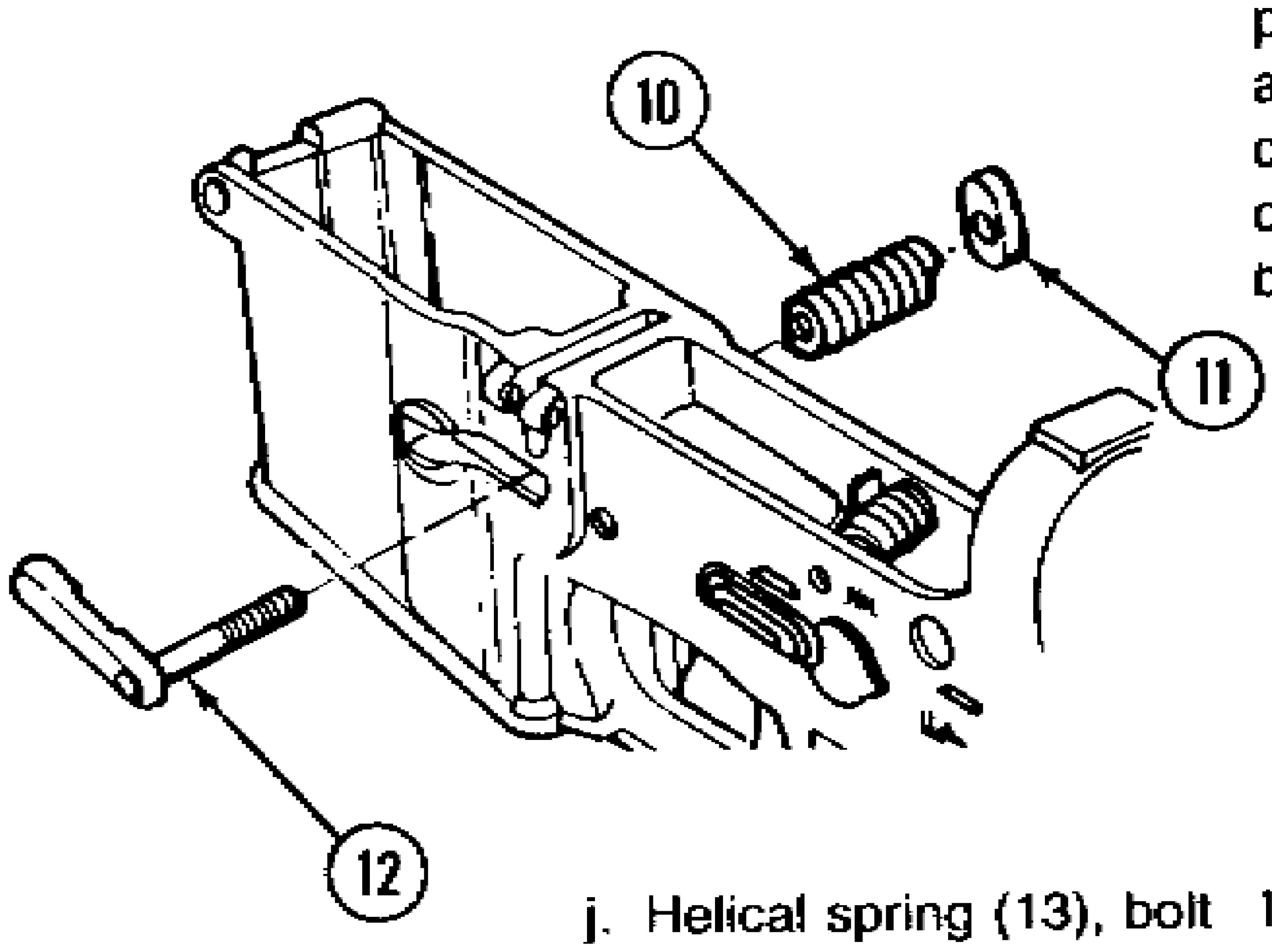


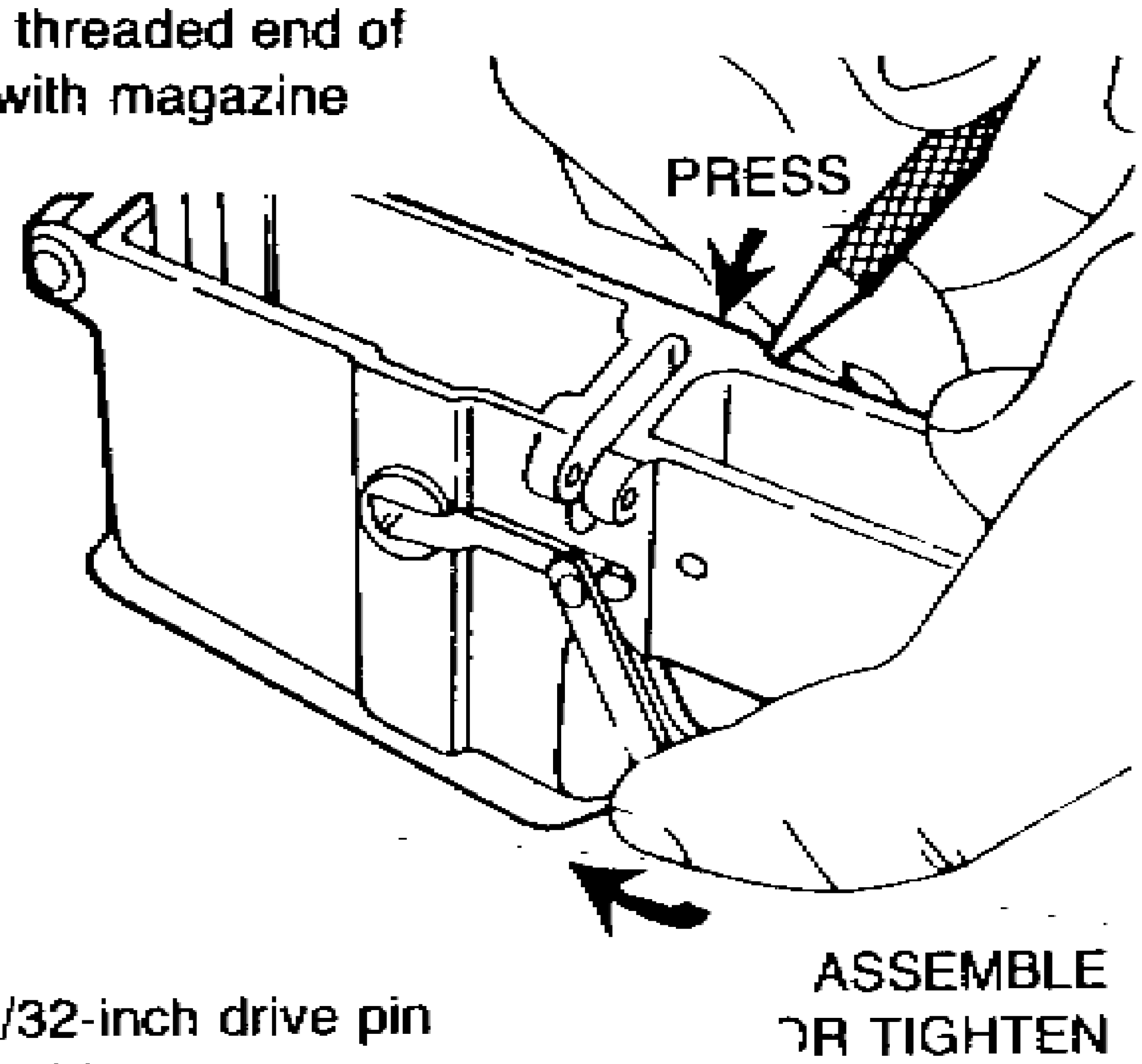
LOCATION	ITEM	ACTION	REMARKS
	e. Selector lever (7) and automatic sear (8)	Install.	Selector, if installed, must be positioned to automatic. Long leg of spring must rest on top of selector.
	f. Automatic sear pin (9)	Install automatic sear pin into receiver using drive pin punch. Push flush.	



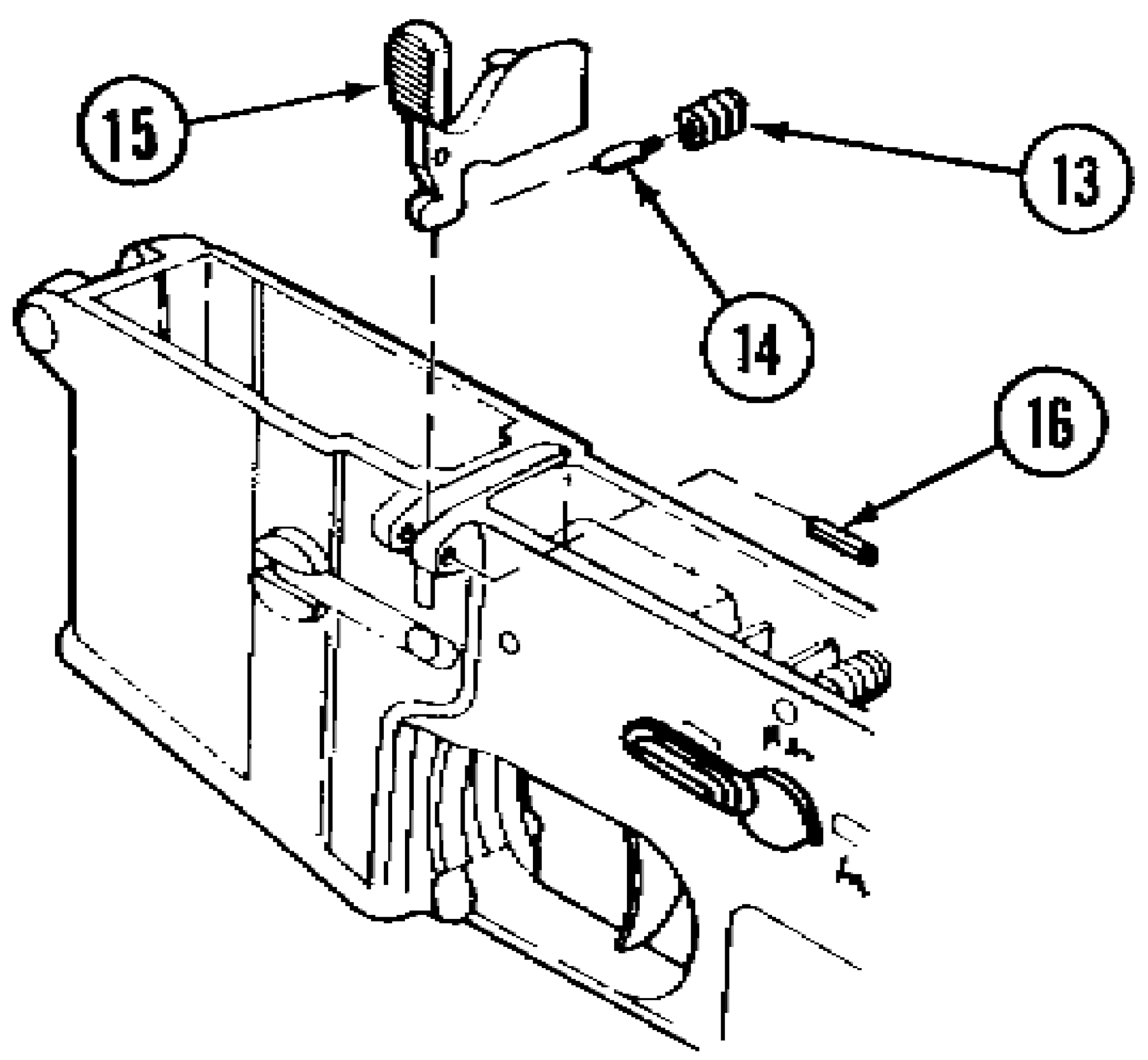


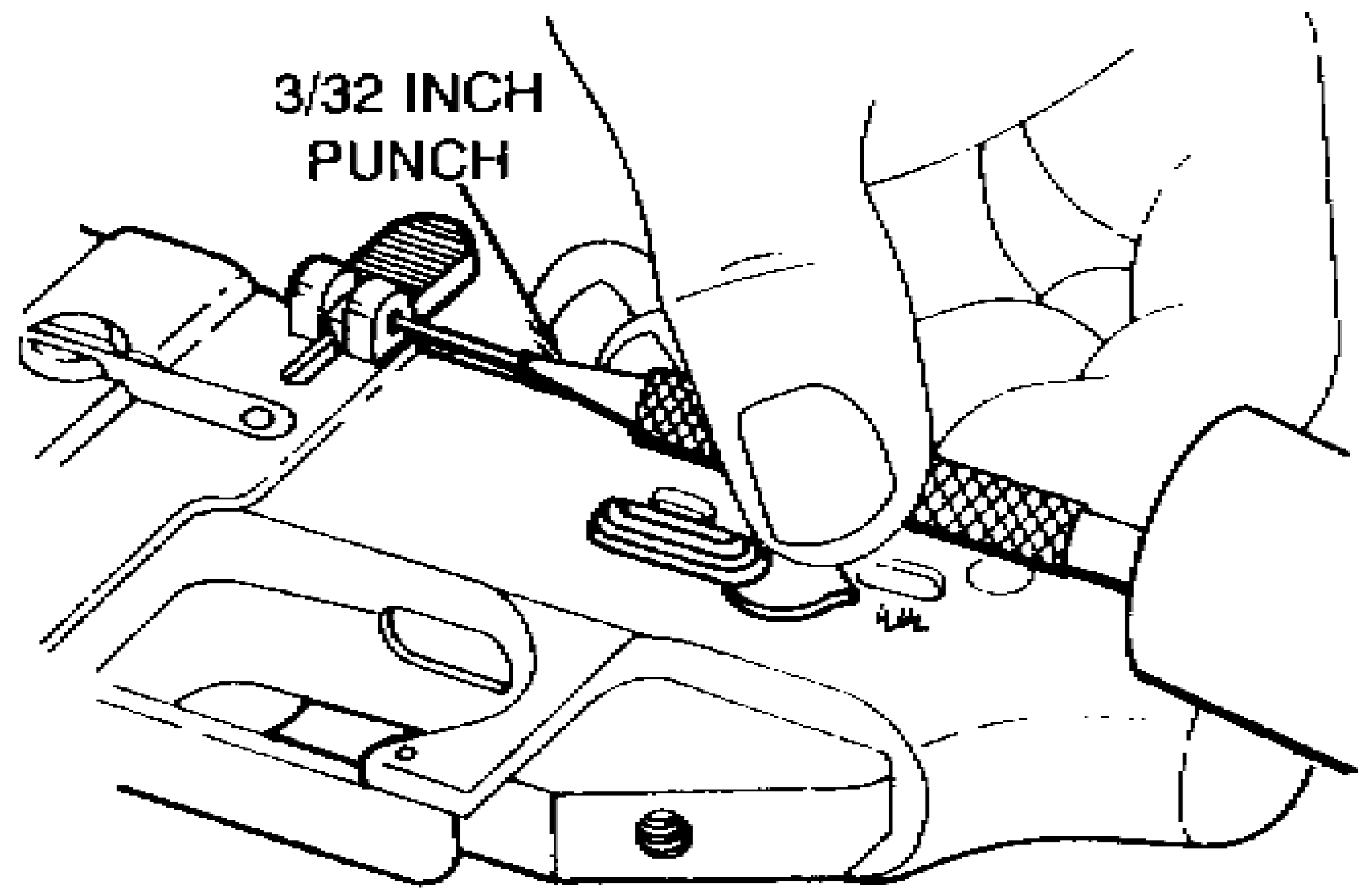
LOCATION	ITEM	ACTION	REMARKS
	g. Helical spring (10)	Install.	
	h. Magazine button (11)	Install.	
	i. Magazine catch (12)	Install. Using drive pin punch, push in on magazine button (11) and turn magazine catch (12) clockwise until threaded end of catch is flush with magazine button head.	



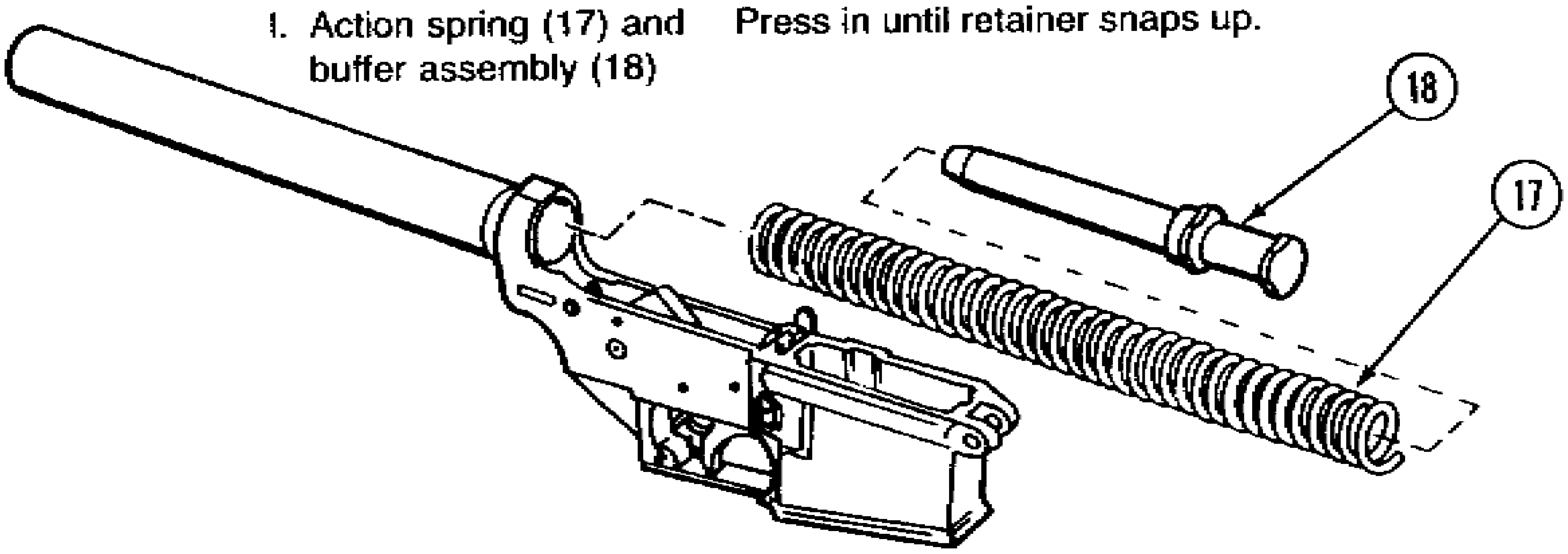


LOCATION	ITEM	ACTION	REMARKS
	j. Helical spring (13), bolt catch plunger (14), and bolt catch (15)	Install.	
	k. Spring pin (16)	Install using 3/32-inch drive pin punch and hand hammer.	





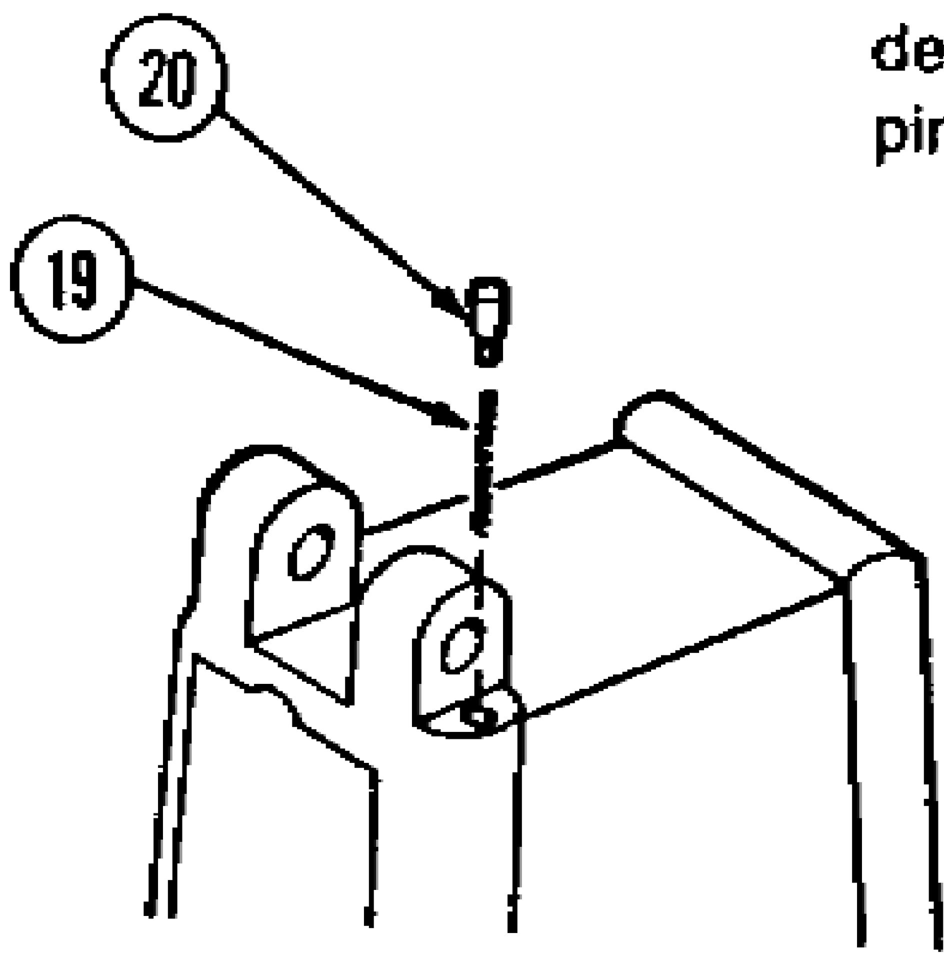
LOCATION	ITEM	ACTION	REMARKS
	l. Action spring (17) and buffer assembly (18)	Press in until retainer snaps up.	

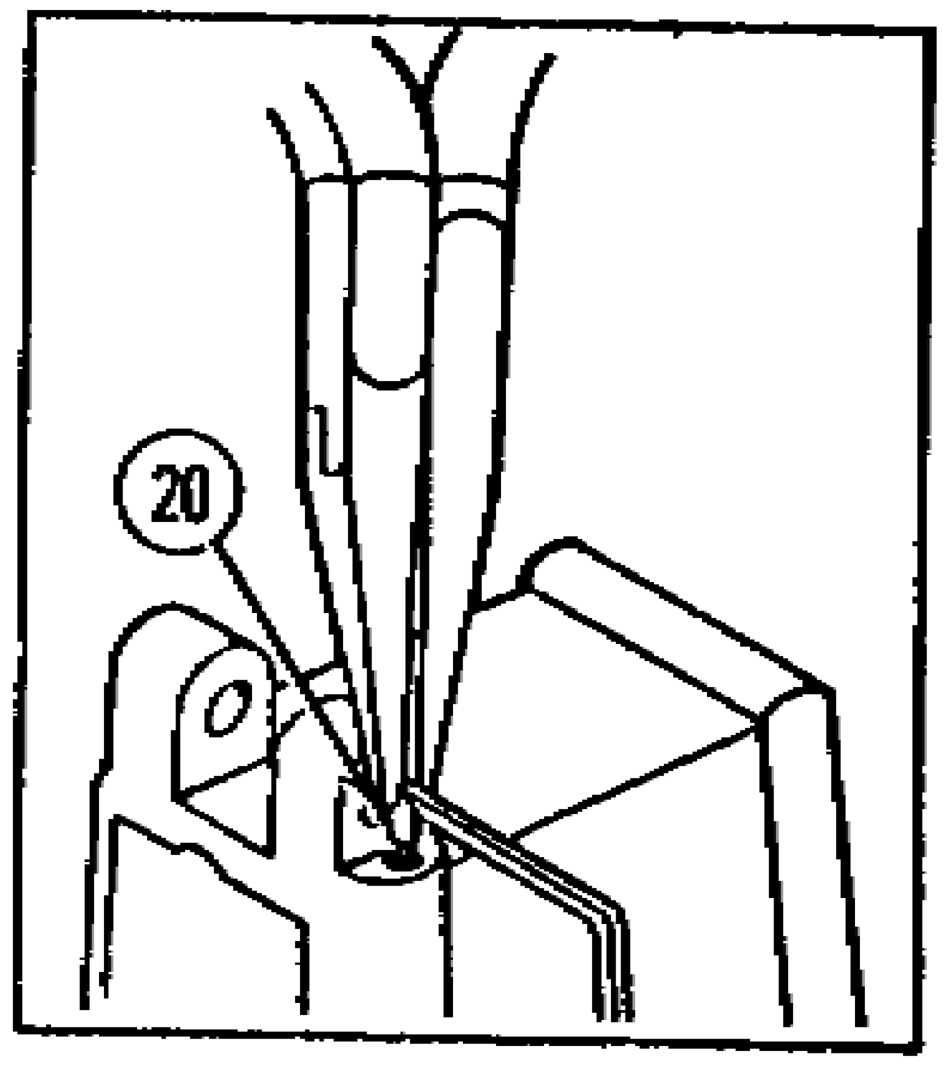


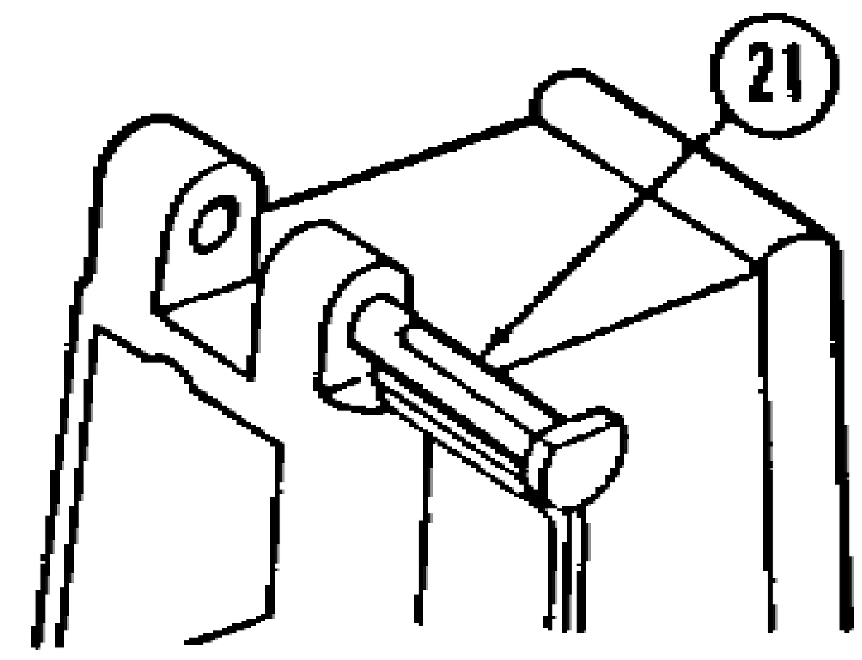
3-16. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

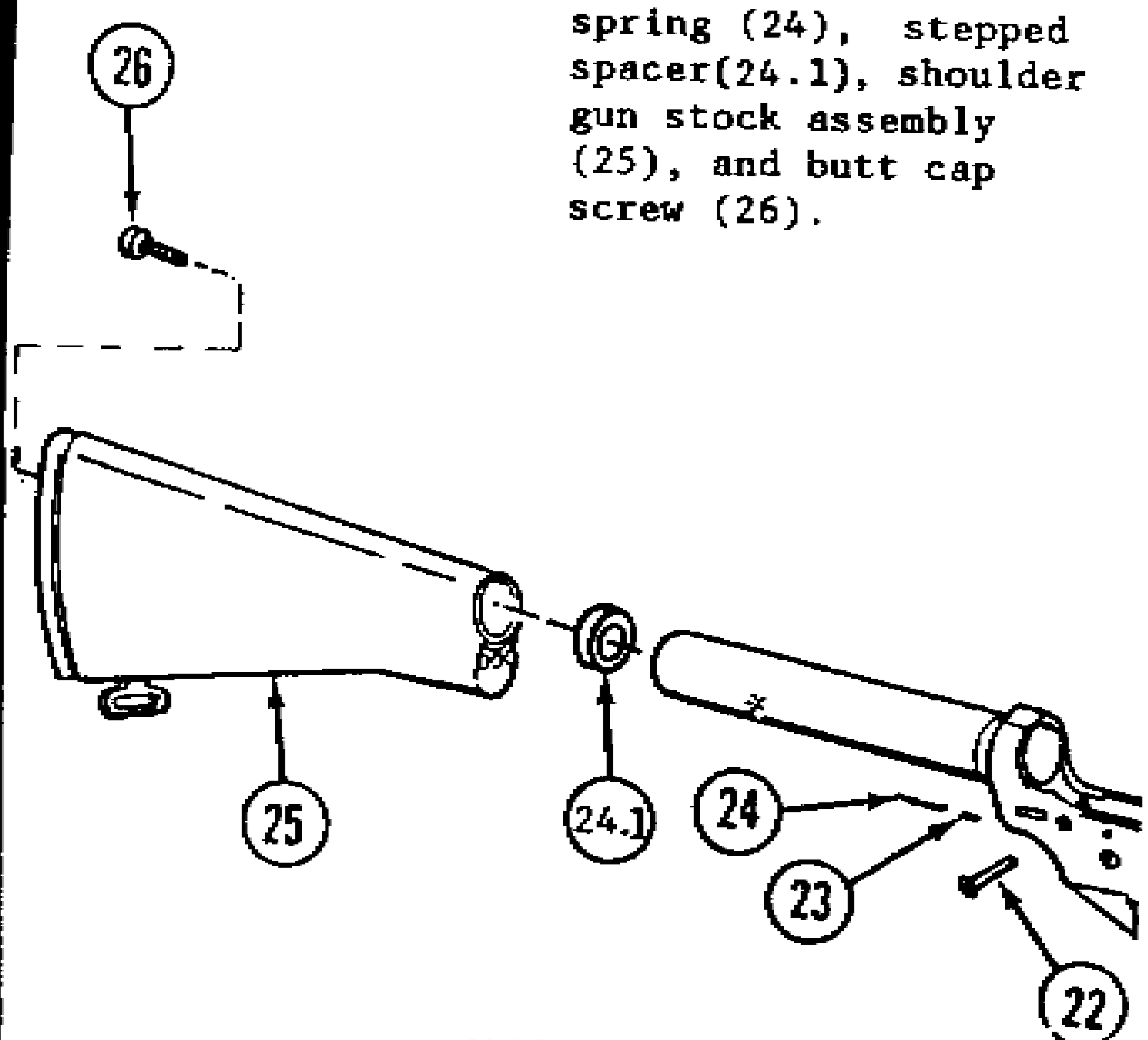
LOCATION	ITEM	ACTION	REMARKS
	m. Helical spring (19), takedown pin detent (20), and pivot pin (21)	Insert helical spring in hole. Position detent with needle nose pliers. Depress detent with fabricated tool (E-3, app E). Remove pliers.	Be sure detent is in groove of pivot pin.
	n. Takedown pin (22), takedown pin detent (23), helical spring (24), stepped spacer(24.1), shoulder gun stock assembly (25), and butt cap screw (26).	Position pivot pin to keep detent depressed while removing fabricated tool (E-3, app E). Slide pin into hole. Rotate pin to receive detent. Install takedown pin with groove to the rear. Install detent and spring from the rear. Install spacer on receiver extension. Begin to install buttstock assy. Carefully compress the spring with stock and secure the stock in place with the butt cap screw. The following procedure should be used to tighten the butt cap screw: Tighten the screw until the tapered screw head has seated under normal pressure and resistance is experienced. Tighten the screw an additional quarter turn. if the butt cap screw continues to loosen under use, it should be replaced with a new one.	Butt cap screw PN 9349-128 and stepped spacer is required when utilizing buttstock assy 9349119. For dimensional identification of buttstock, refer to Figure C-11A.

REASSEMBLY (CONT)





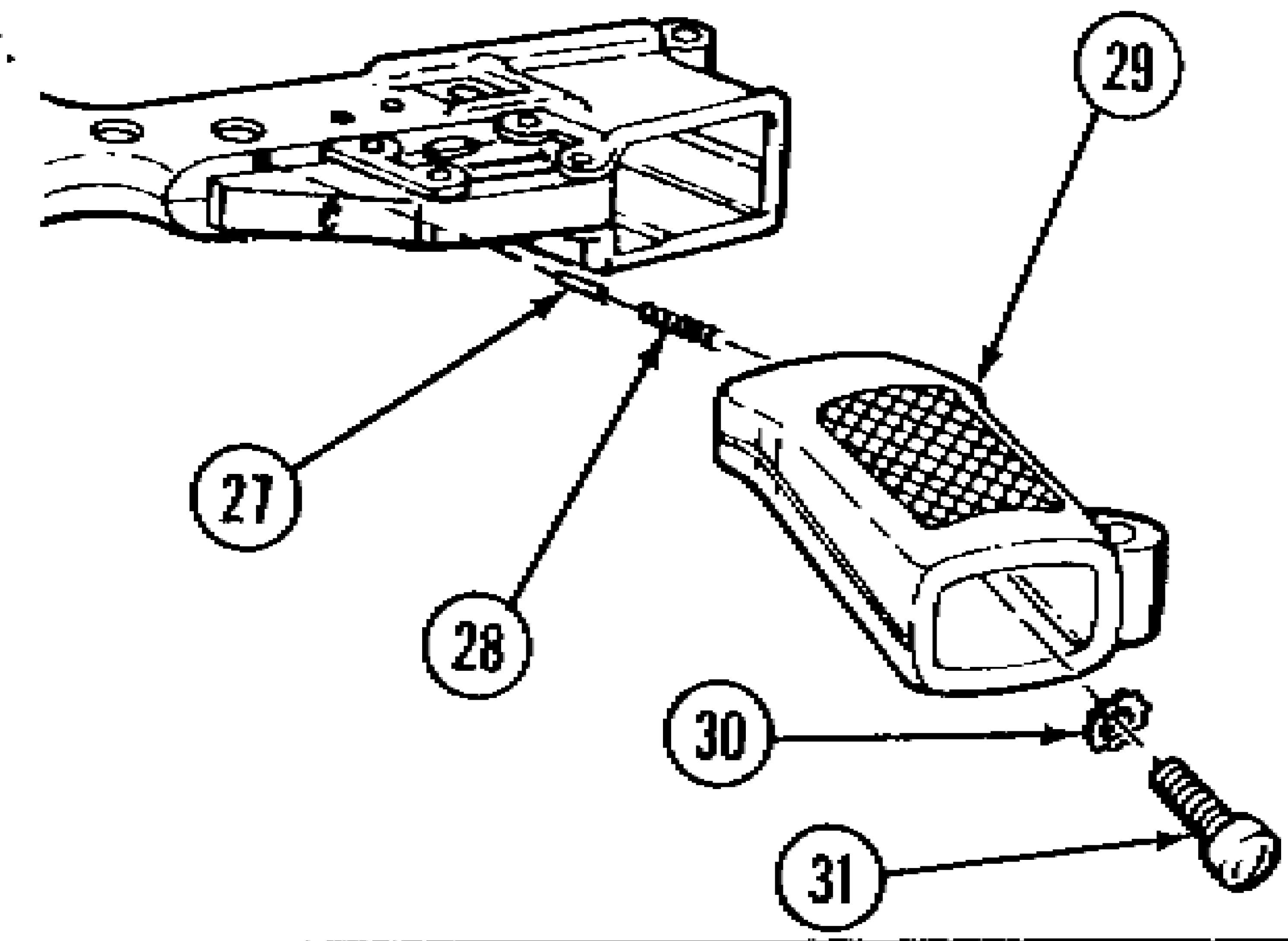




NOTE

The butt cap screw is a self locking screw. Due to the critical nature of the parts concerned, if the butt cap screw is removed it must be discarded and replaced with a new one.

LOCATION	ITEM	ACTION	REMARKS
	o. Safety detent (27), helical spring (28), rifle grip (29), lock washer (30), and machine screw (31)	Install detent (pointed end up) and spring from the bottom. Carefully compress the spring with the rifle grip and secure the grip in place with the lock washer and screw.	



3-17. SHOULDER GUN STOCK ASSEMBLY.

This task covers:
a. Inspection
b. Repair

INITIAL SETUP

Applicable Configuration
All M16/M16A1 rifles

References
TM 9-1005-301-30

Equipment Condition

Page	Condition Description
3-51	Buttstock removed

LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
Shoulder Gun Stock Assembly	Buttstock	Inspect.	See page 3-56.
REPAIR			
Shoulder Gun Stock Assembly	Buttstock	Repair.	See TM 9-1005-301-30.

3-18. HAMMER ASSEMBLY.

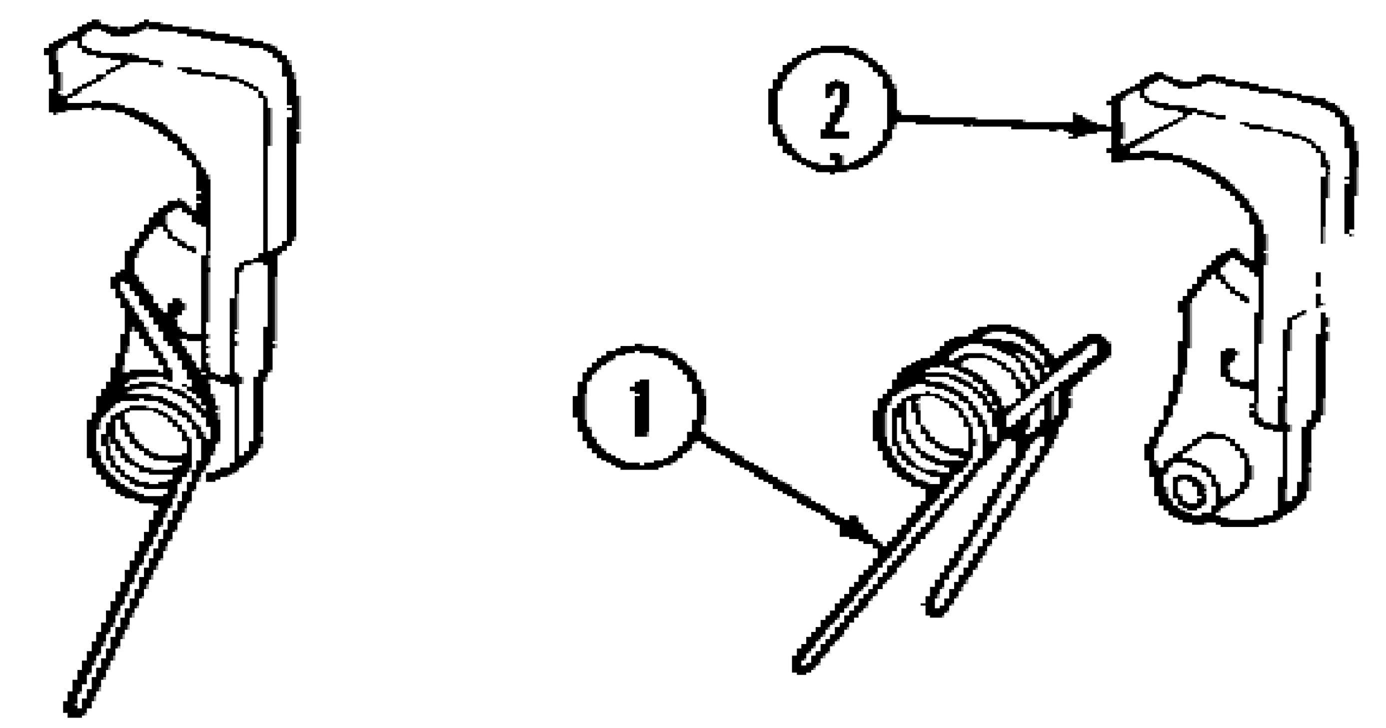
This task covers:

a. Disassembly
b. Inspection
c. Reassembly

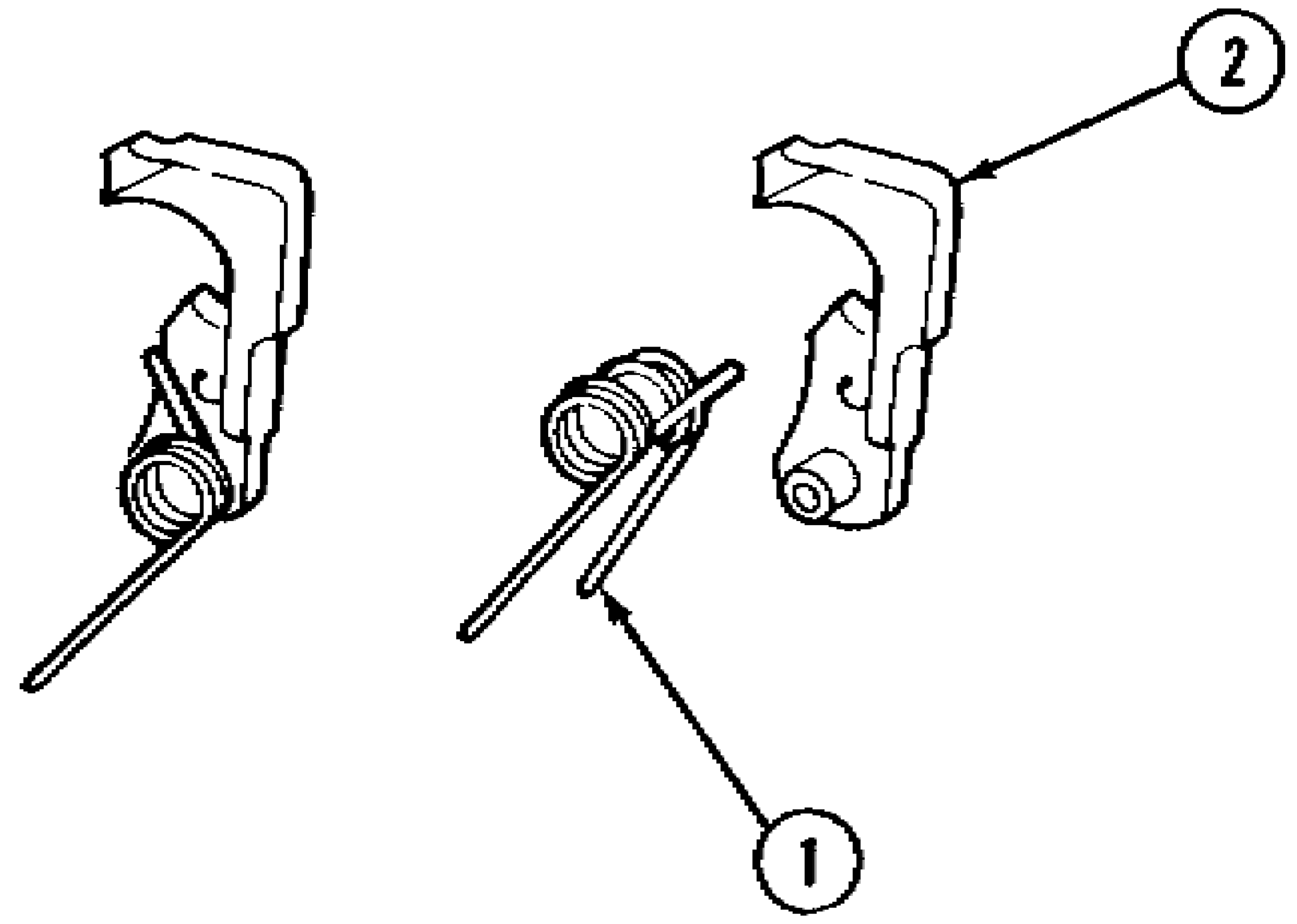
INITIAL SETUP

Applicable Configuration
All M16/M16A1 rifles

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Hammer Assembly	Hammer spring (1) and firing hammer (2)	Remove.	



LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
Hammer Assembly	a. Hammer spring	Inspect for deformities, breaks, and bends. Replace if defective.	
	b. Firing hammer	Inspect for chips and breaks. Replace if defective.	Install hammer pin into hole in hammer to check the plunger and spring retaining the hammer pin.
REASSEMBLY			
Hammer Assembly	Hammer spring (1) and firing hammer (2)	Install.	



3-19. TRIGGER ASSEMBLY.

This task covers:
a. Disassembly
b. Inspection
c. Reassembly

INITIAL SETUP

Applicable Configuration
All M16/M16A1 rifles

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)
Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)

Equipment Condition

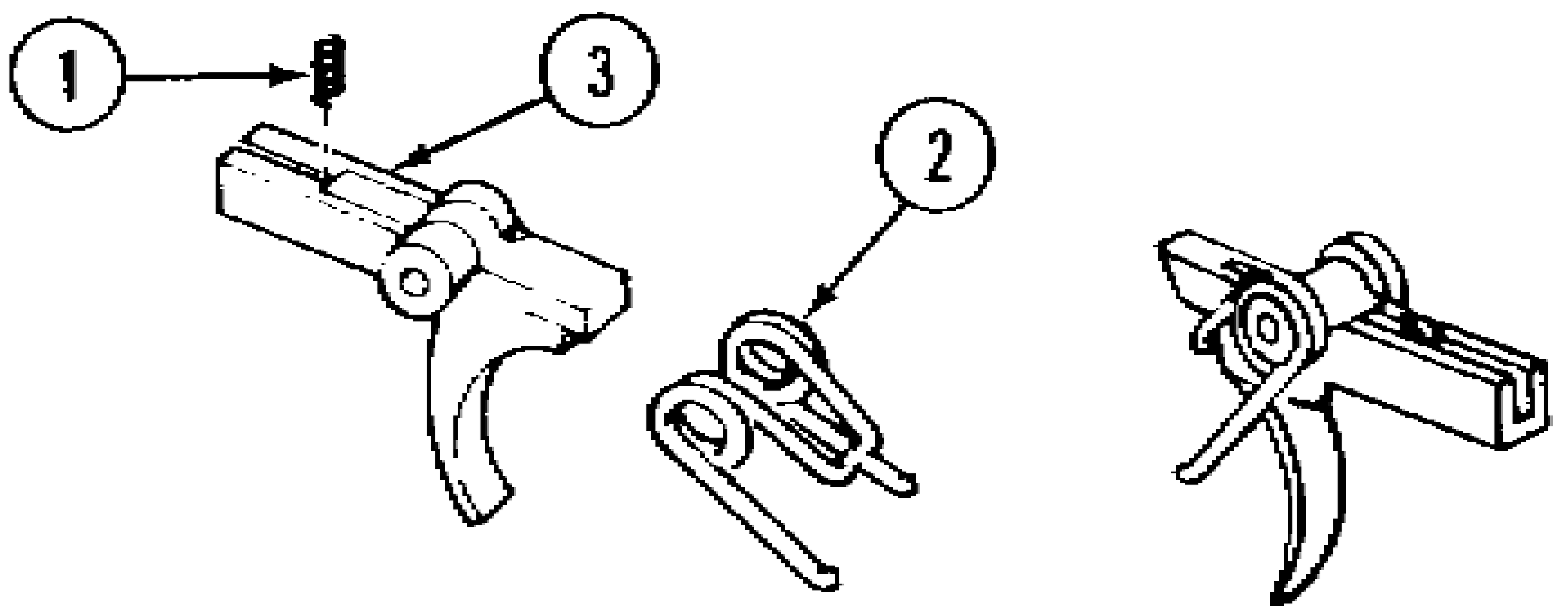
Page	Condition Description
3-55	Trigger assembly removed

General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Trigger Assembly	Helical spring (1), trigger spring (2) and trigger (3)	Remove.	



INSPECTION

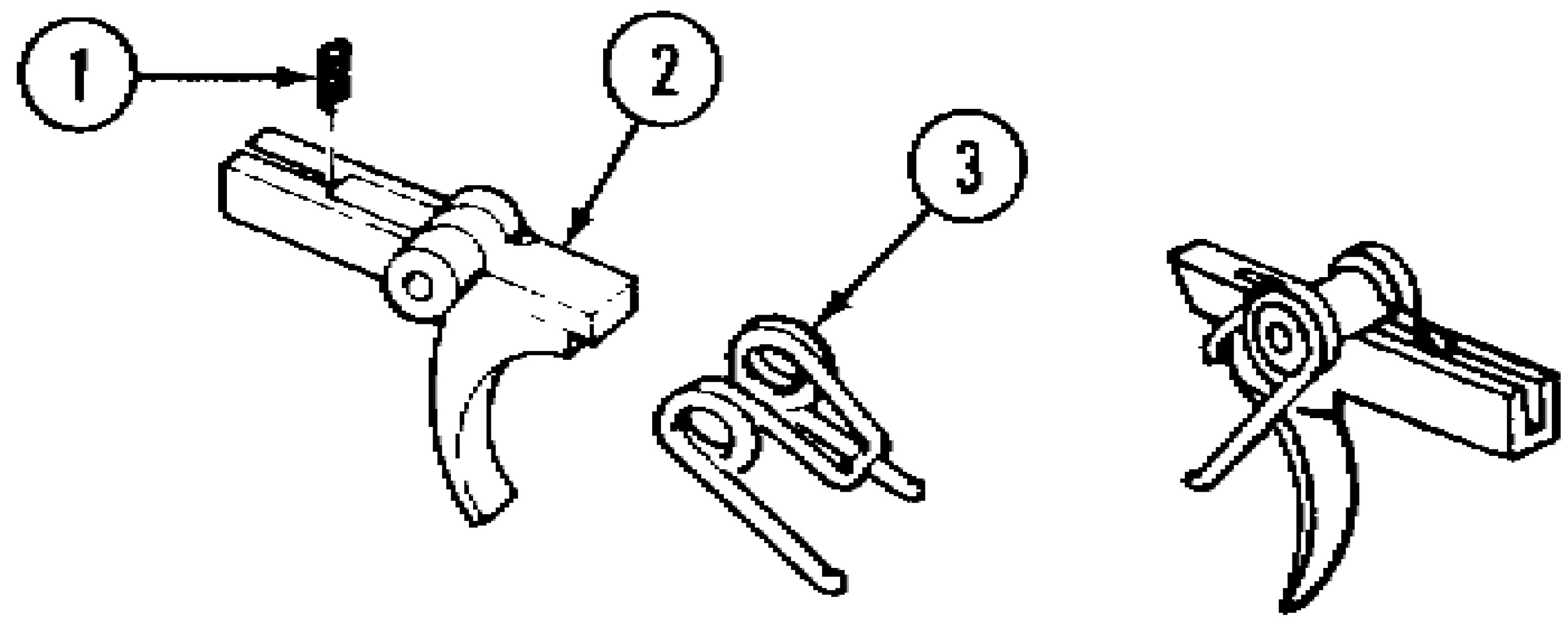
LOCATION	ITEM	ACTION	REMARKS
Trigger Assembly	a. Trigger spring	Inspect for kinks, deformities, and weakness. Replace if defective.	
	b. Helical spring	Inspect for deformities, bends, breaks, and weakness. Replace if defective.	
	c. Trigger	Inspect for chips and cracks. Replace if defective.	

3-19. TRIGGER ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY

Trigger Assembly	a. Compression spring (1)	Install with large end of spring inserted into trigger.	
	b. Trigger (2) and trigger spring (3)	Install.	



3-20. LOWER RECEIVER AND EXTENSION SUBASSEMBLY.

This task covers:

a. Disassembly
b. Inspection
c. Repair/Modify
d. Test
e. Reassembly

INITIAL SETUP

Applicable Configuration

All M16/M16A1 rifles. The lower receivers have serial numbers and model numbers and will not be replaced by Direct or General Support Maintenance.

Tools

Field Maintenance Basic Less Power Small Arms Shop Set SC 4933-95-CL-A11 (19204)
Small Arms Repairman Tool Kit SC 5180-95-CL-A07 (19204)
M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8426685 (19204)
Set D Field Maintenance Post, Camp, and Station Small Arms Shop Set SC 4933-95-CL-A04 (19204)

Materials/Parts

Abrasive cloth (item 6, app D)
Black lacquer (item 12, app D)
Molybdenum disulfide grease (item 11, app D)

Equipment Conditon

Page	Condition Description
3-55	Lower receiver and extension subassembly removed

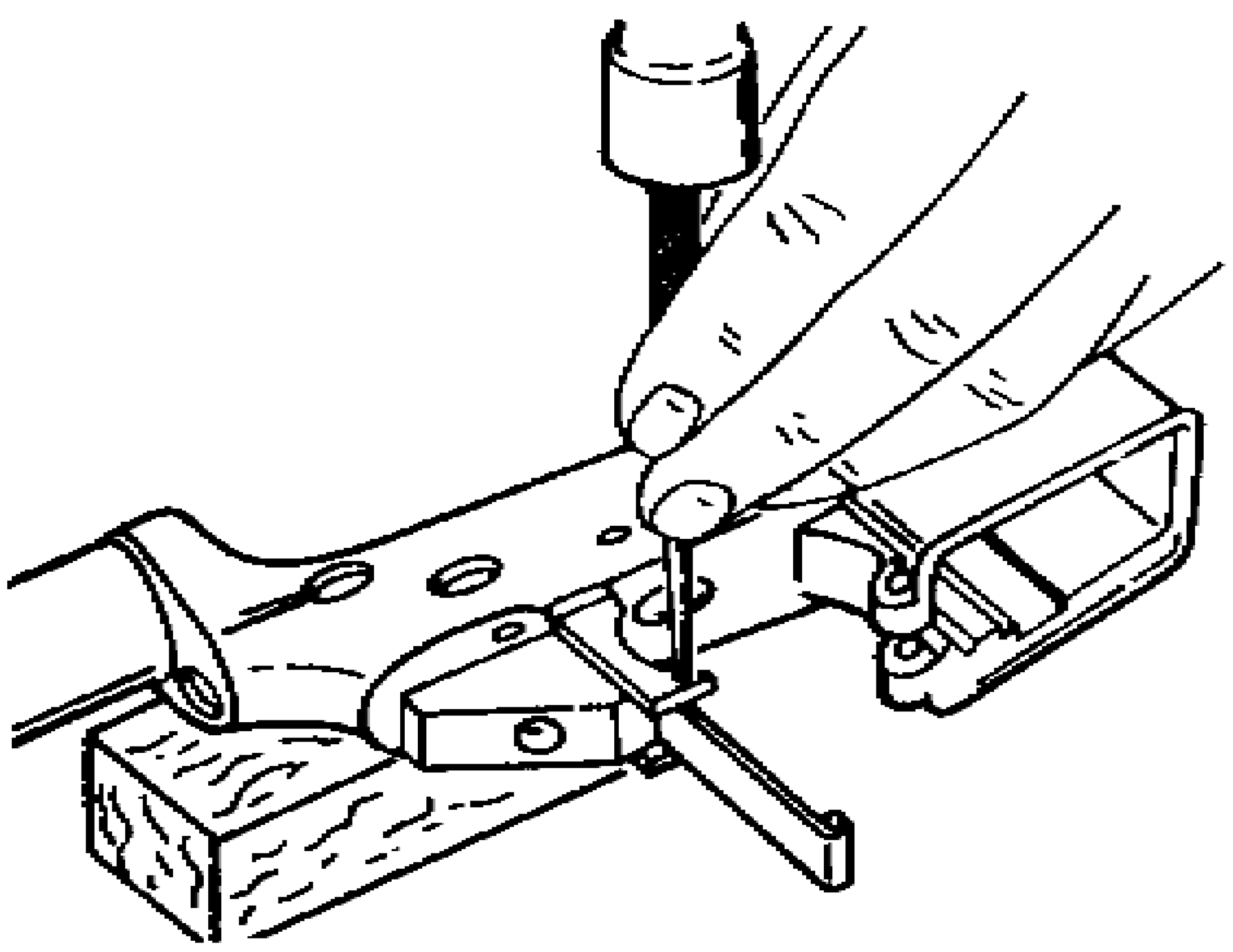
General Safety Instructions

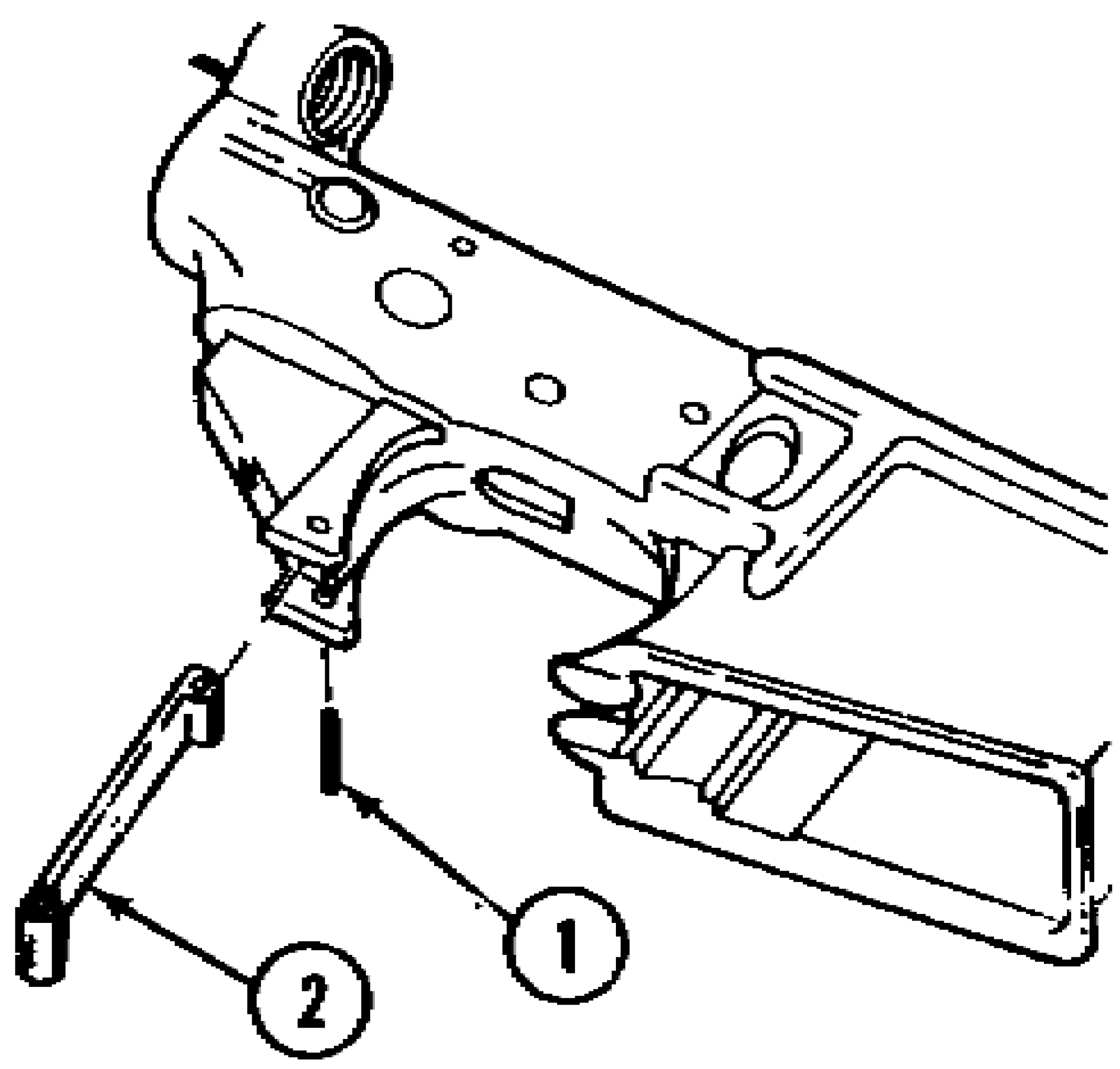
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

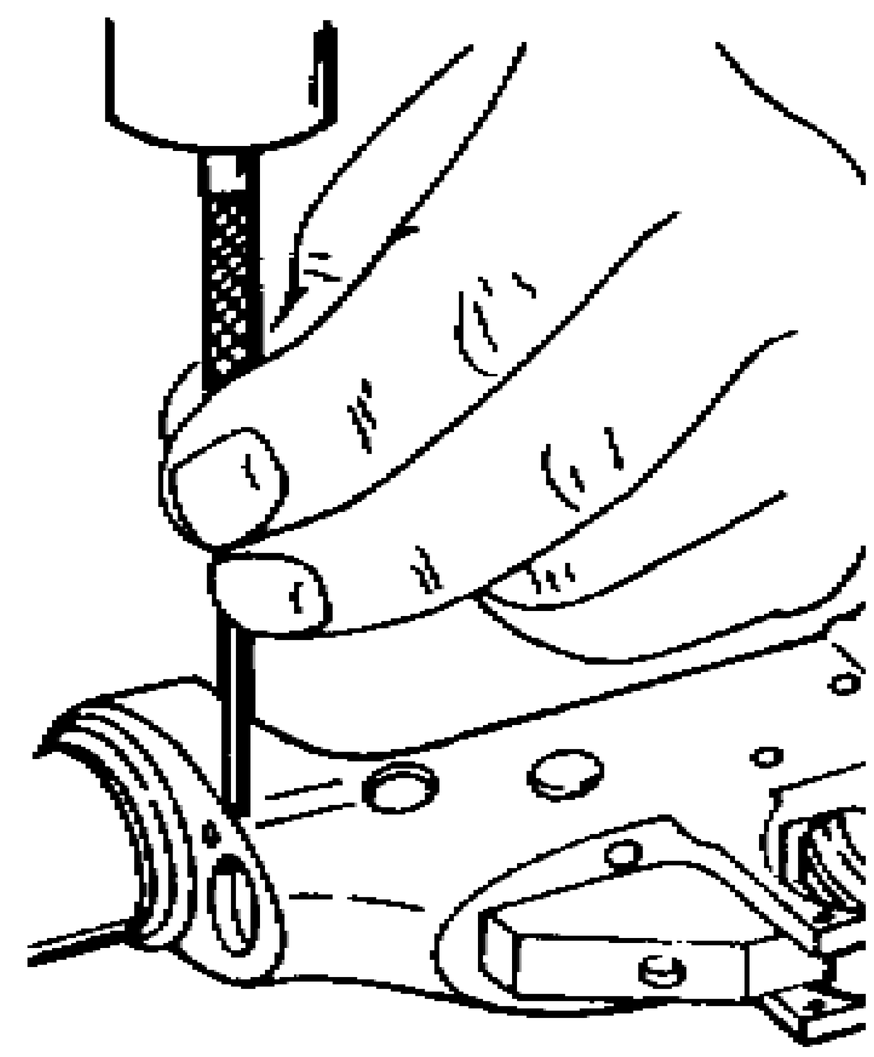
LOCATION	ITEM	ACTION	REMARKS

DISASSEMBLY

Lower Receiver and Extension Subassembly	a. Spring pin (1)	Remove using 1/8-inch drive pin punch and hand hammer.	
	b. Trigger guard (2)	Remove.	



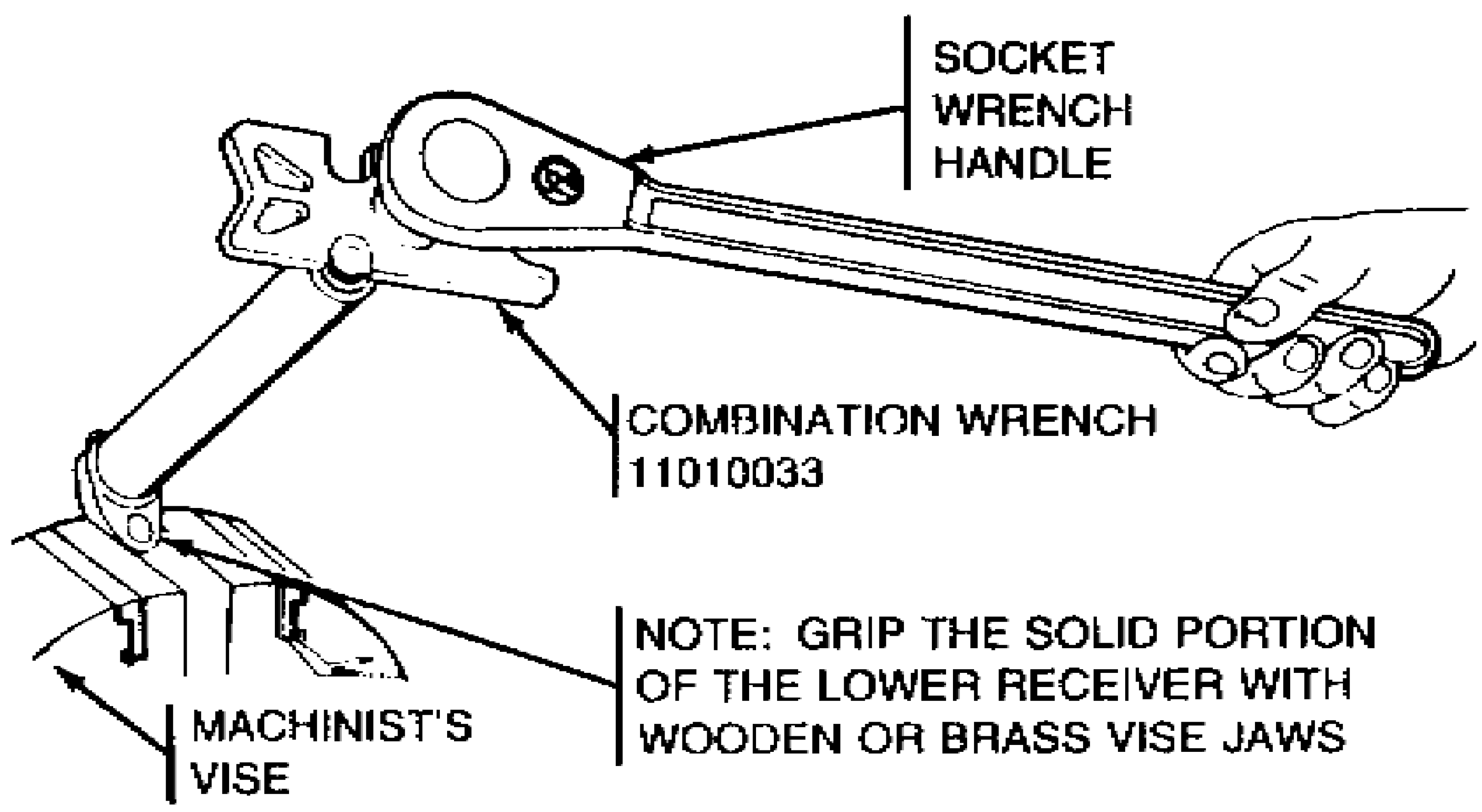


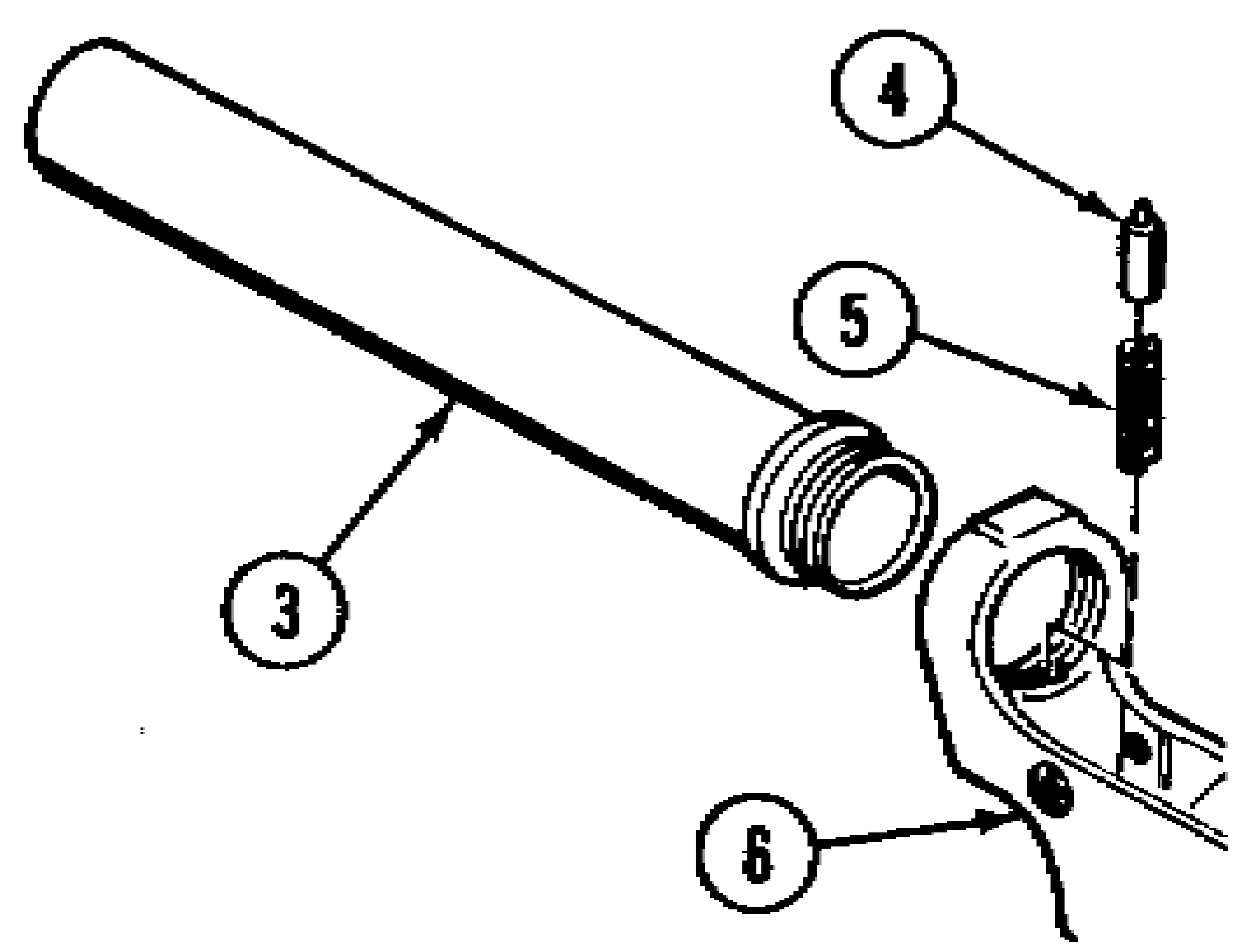


NOTE

Old type receiver extension requires removal of spring pin. If spring pin is installed, remove and discard. Modify lower receiver extension prior to reassembly. See repair page 3-69.

	c. Lower receiver extension (3)	Remove using machinist's vise, vise jaw caps, combination wrench, and socket wrench handle. Clamp lower receiver in vise and tighten on solid portion just tight enough to hold.	**NOTE** If wooden vise jaws are available, use in place of brass vise jaw caps.
	d. Buffer retainer (4) and helical spring (5)	Remove.	As lower receiver extension is removed, catch buffer retainer and spring.
	e. Lower receiver (6)		Serial number controlled.



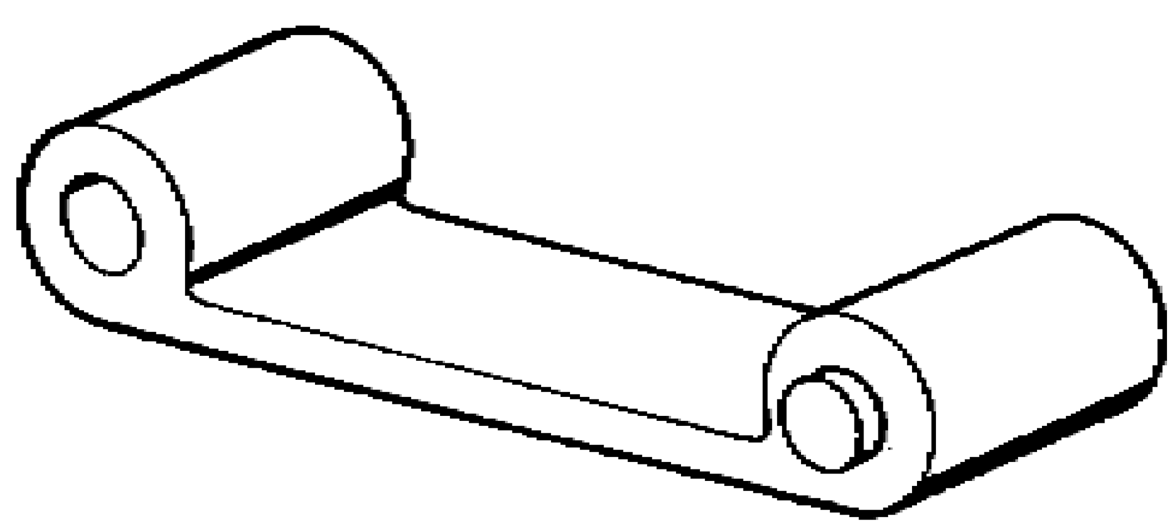


3-20. LOWER RECEIVER AND EXTENSION SUBASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

INSPECTION

LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Subassembly	a. Lower receiver extension	Inspect for corrosion, dents, and wear. Repair or replace if defective.	See page 3-57.
	b. Buffer retainer	Inspect for wear and replace if defective.	
	c. Helical spring	Inspect for deformities and breaks. Replace if defective.	
	d. Lower receiver	Inspect.	See pages 3-57 and 3-58.
	e. Trigger guard	Inspect for deformities and check plunger and spring. Replace if defective.	

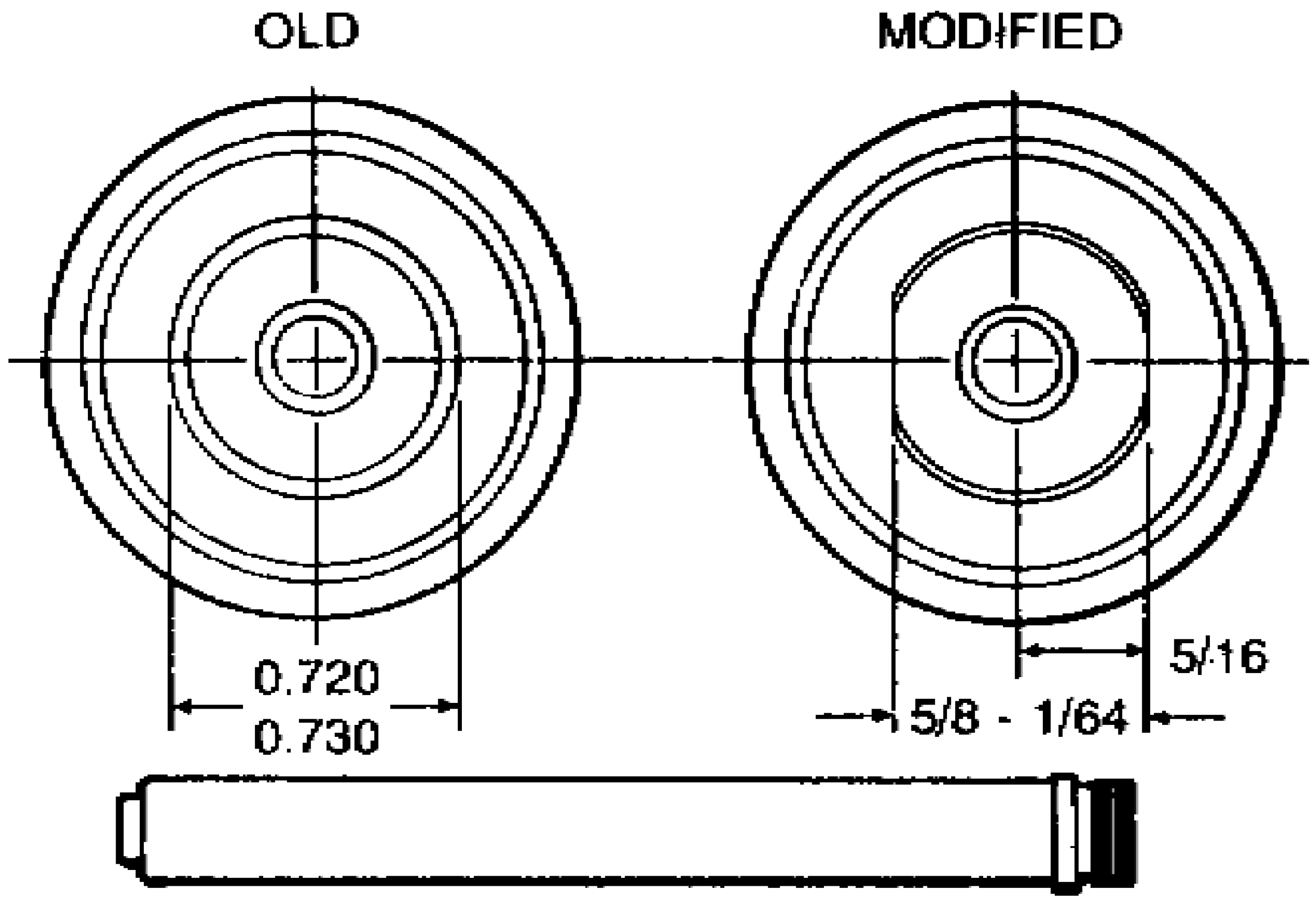


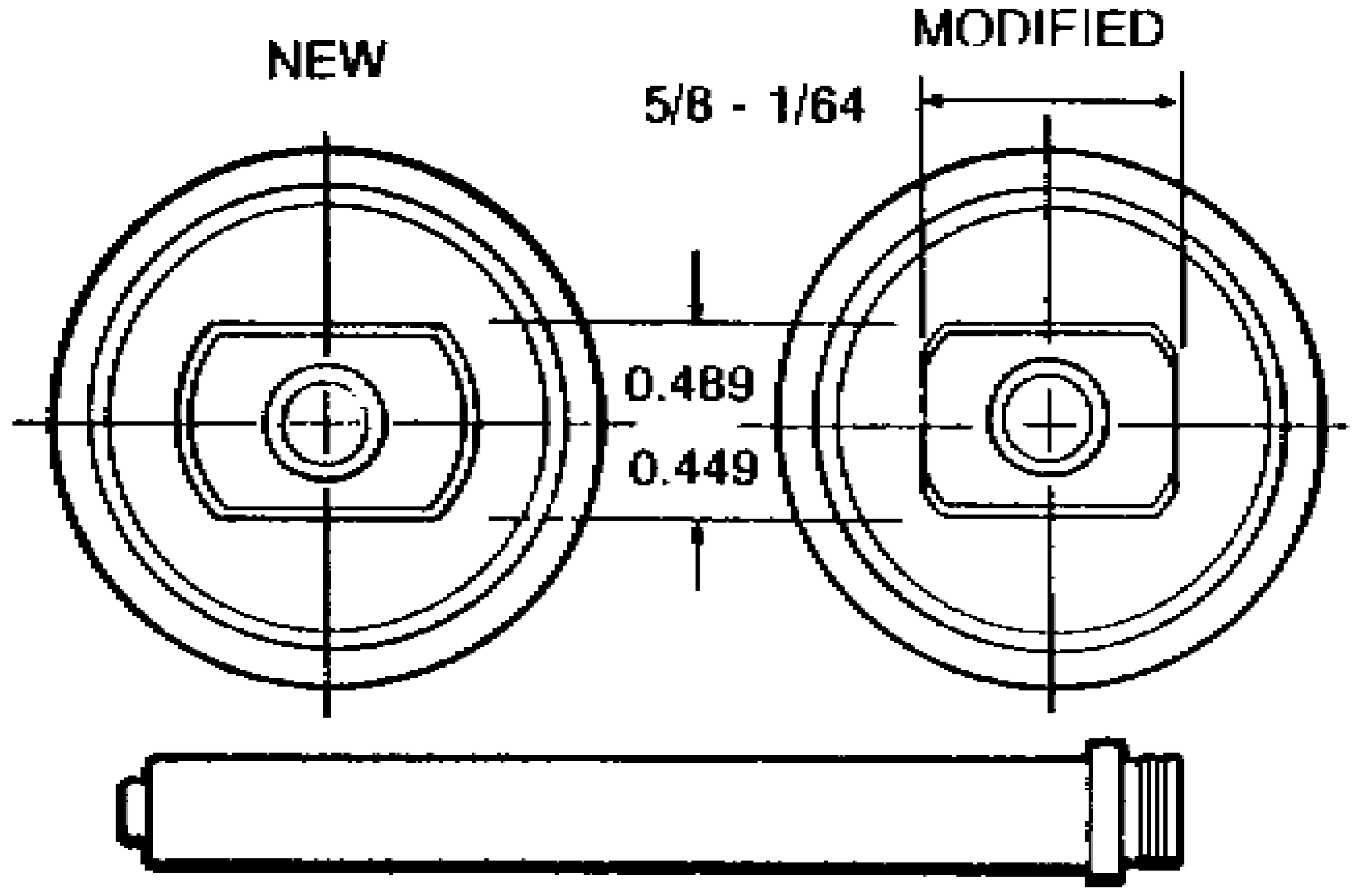
REPAIR/MODIFY

LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Subassembly	a. Lower receiver extension	Repair. Using abrasive cloth (item 6, app D), remove light corrosion and use black lacquer (item 12, app D) to retouch.	

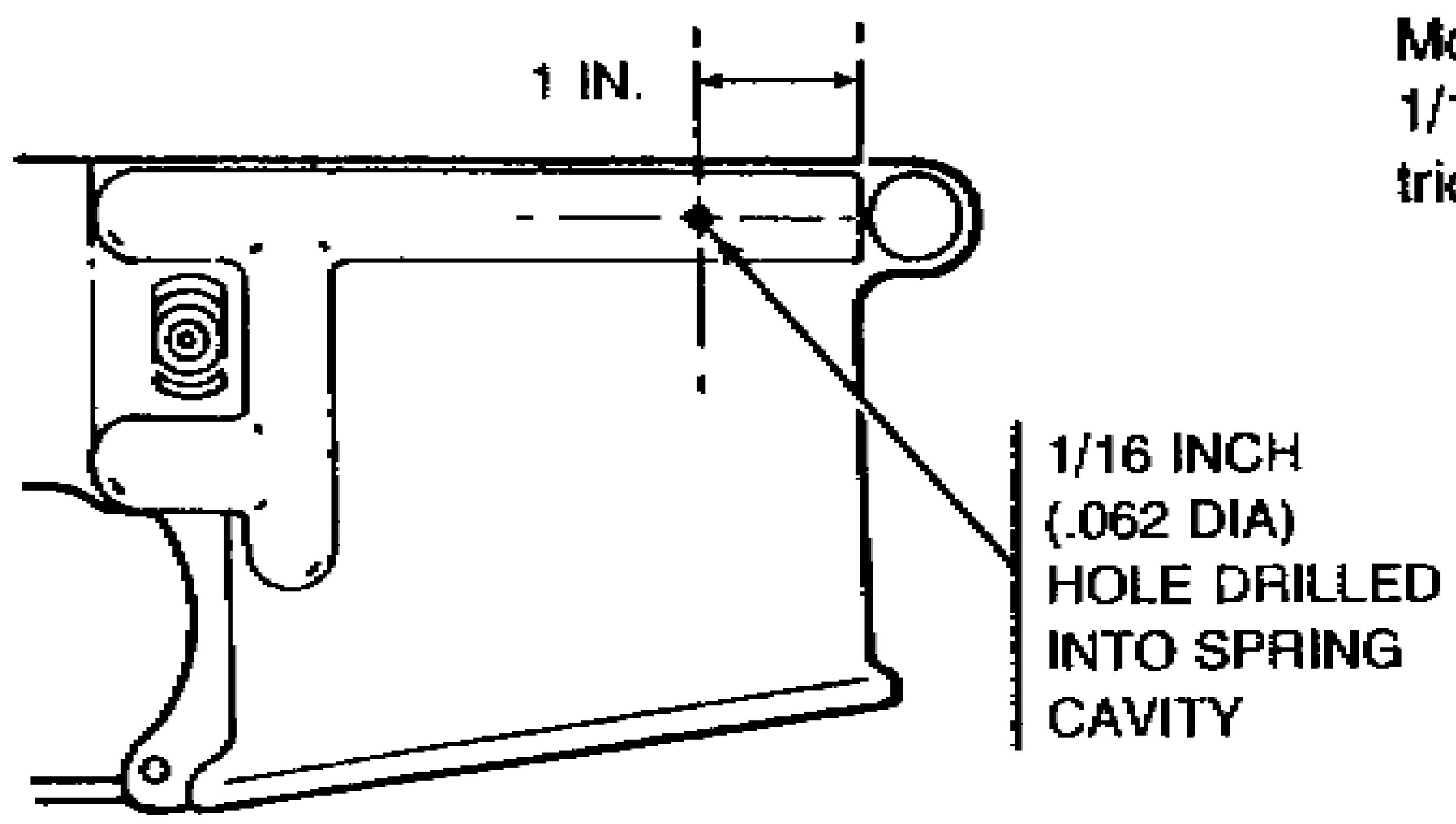
LOCATION	ITEM	ACTION	REMARKS
		Modify (when required) to drawing dimensions using file handle, hand file, machinist's vise, and vise jaw caps.	

RECEIVER EXTENSIONS USABLE AFTER FORMING OF FLATS





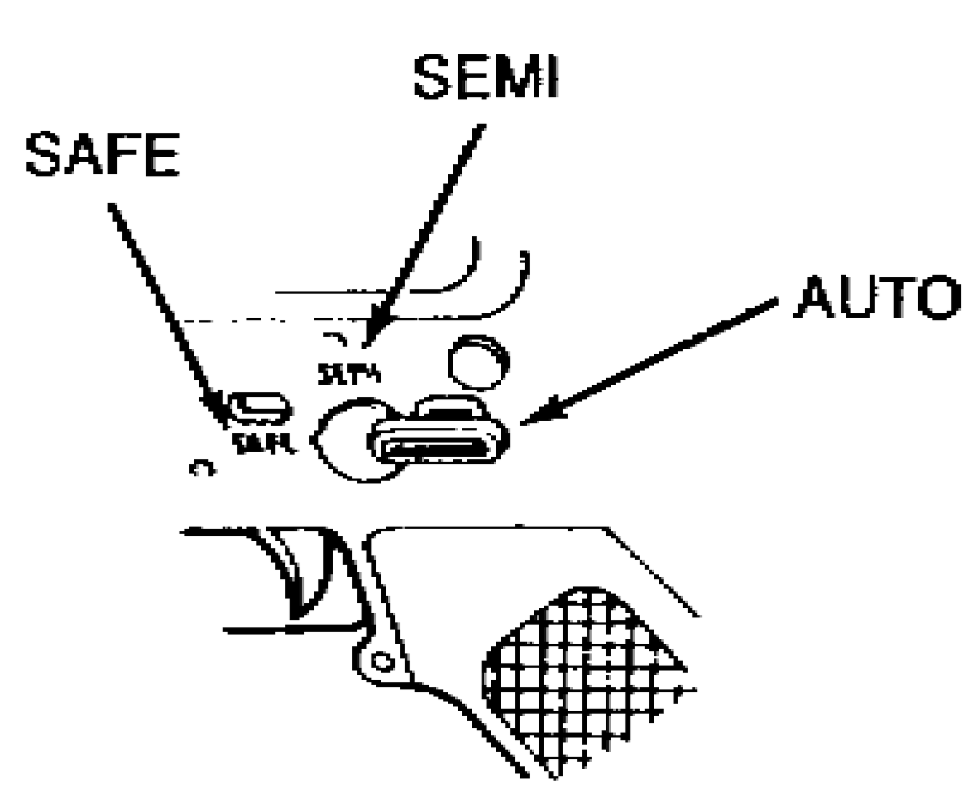
LOCATION	ITEM	ACTION	REMARKS
	b. Lower receiver	Inspect for damage, wear, and corrosion.	See page 3-57.
		Repair or replace weapon.	
		Modify (when required) using 1/16 twist drill and portable electric drill per drawing.	Spring must be removed before drilling.



CAUTION: EXERCISE EXTREME CARE WHEN DRILLING HOLE THAT PENETRATIONS IS NOT MADE IN INNER WALL OF SPRING CAVITY

NOTE

Only general support maintenance level is authorized to use an electric engraver.



Re-mark the selector positions, as necessary to read, using an electric engraver.

3-20. LOWER RECEIVER AND EXTENSION SUBASSEMBLY (CONT).

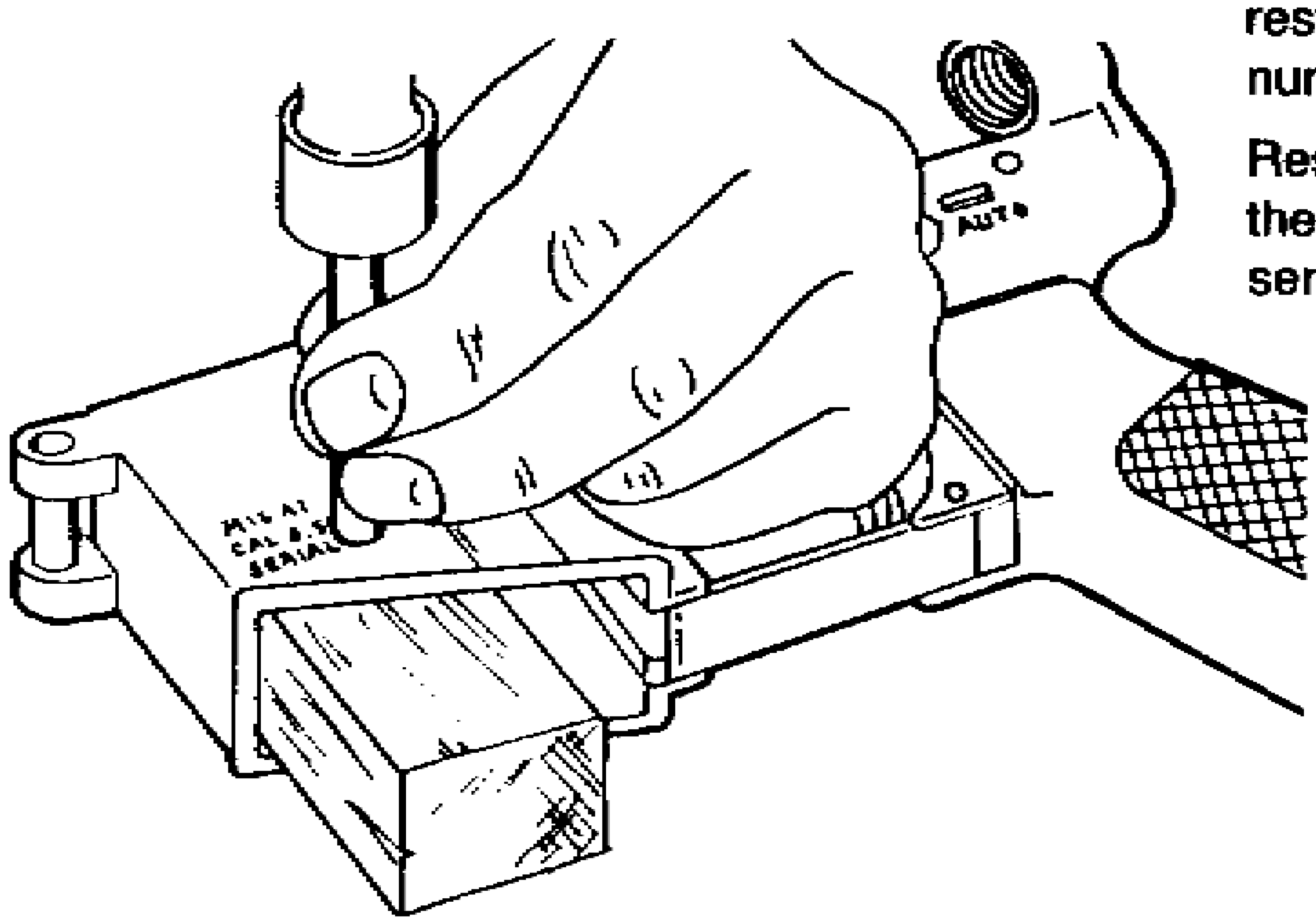
LOCATION	ITEM	ACTION	REMARKS

REPAIR/MODIFY (CONT)

NOTE

Only general support level is authorized to restamp serial numbers.

LOCATION	ITEM	ACTION	REMARKS
		If serial number is hard to read on weapon, restamp as follows: Support the receiver in the stamping area to prevent bending and distortion of the receiver. Exercise extreme care to restamp the same serial number as original. Restamp the serial number the same size as the original serial number.	Most weapon serial numbers are 1/8 inch in height, or close enough that this size is acceptable for such restamping. In the event that a weapon has a serial number that cannot be reproduced by the use of the die sets contained in the Set D Field Maintenance Post, Camp, and Station Small Arms Shop Set, local purchase of an appropriate size die set is authorized.



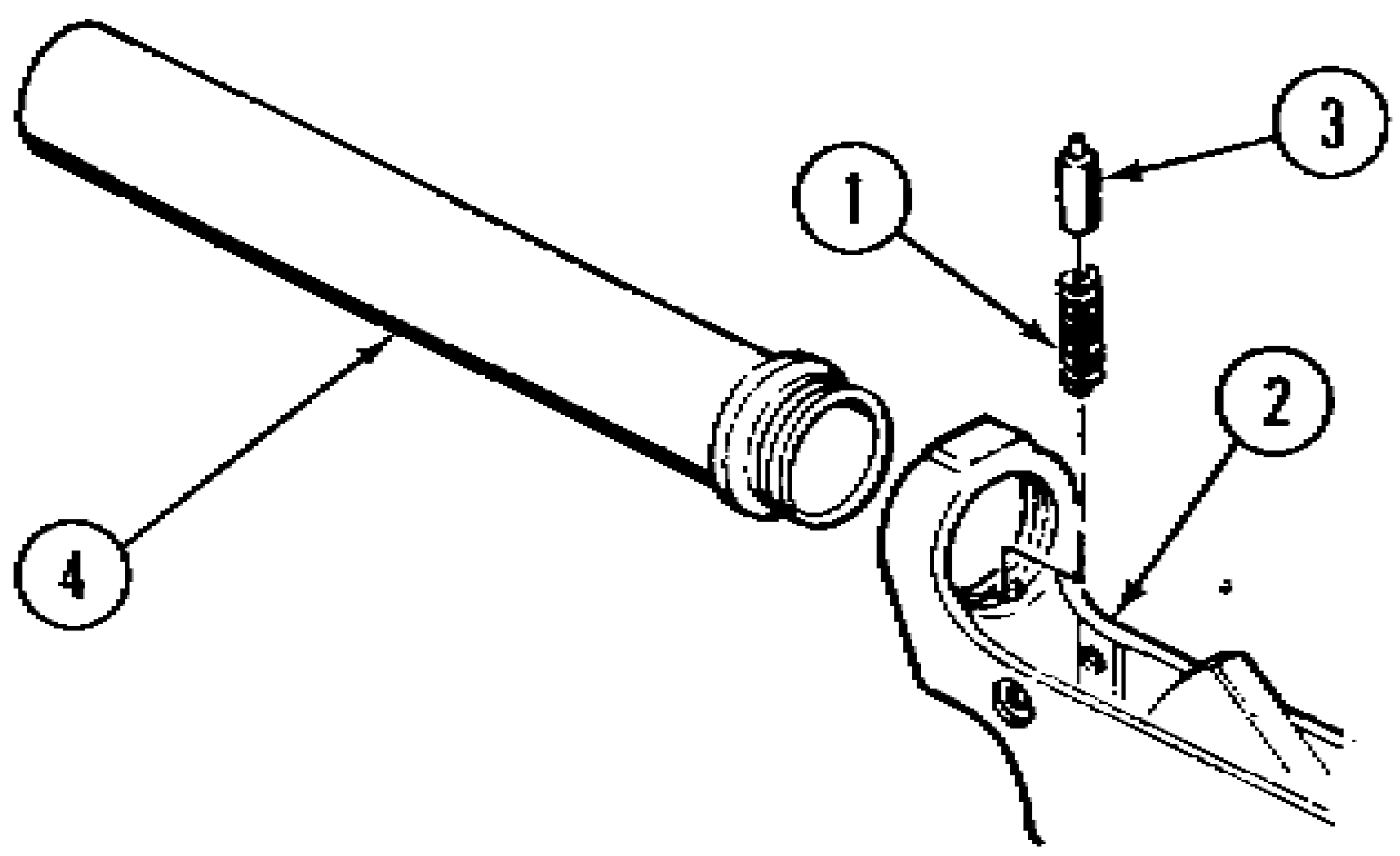
TEST

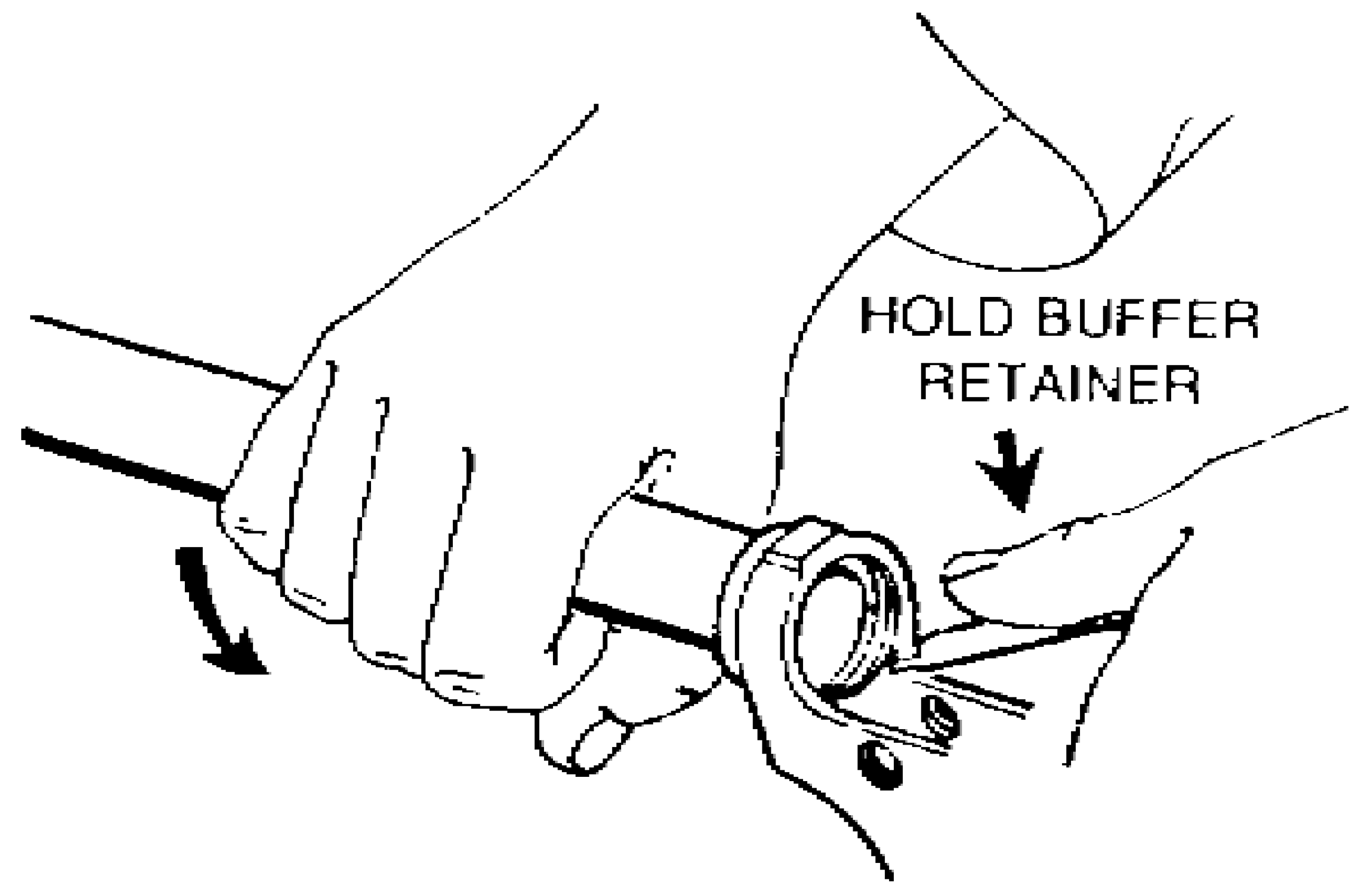
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Subassembly	a. Trigger pin holes and hammer pin holes	Test.	See page 3-59.
	b. Lower receiver lobe area spacing.	Test.	See page 3-58.

LOCATION	ITEM	ACTION	REMARKS

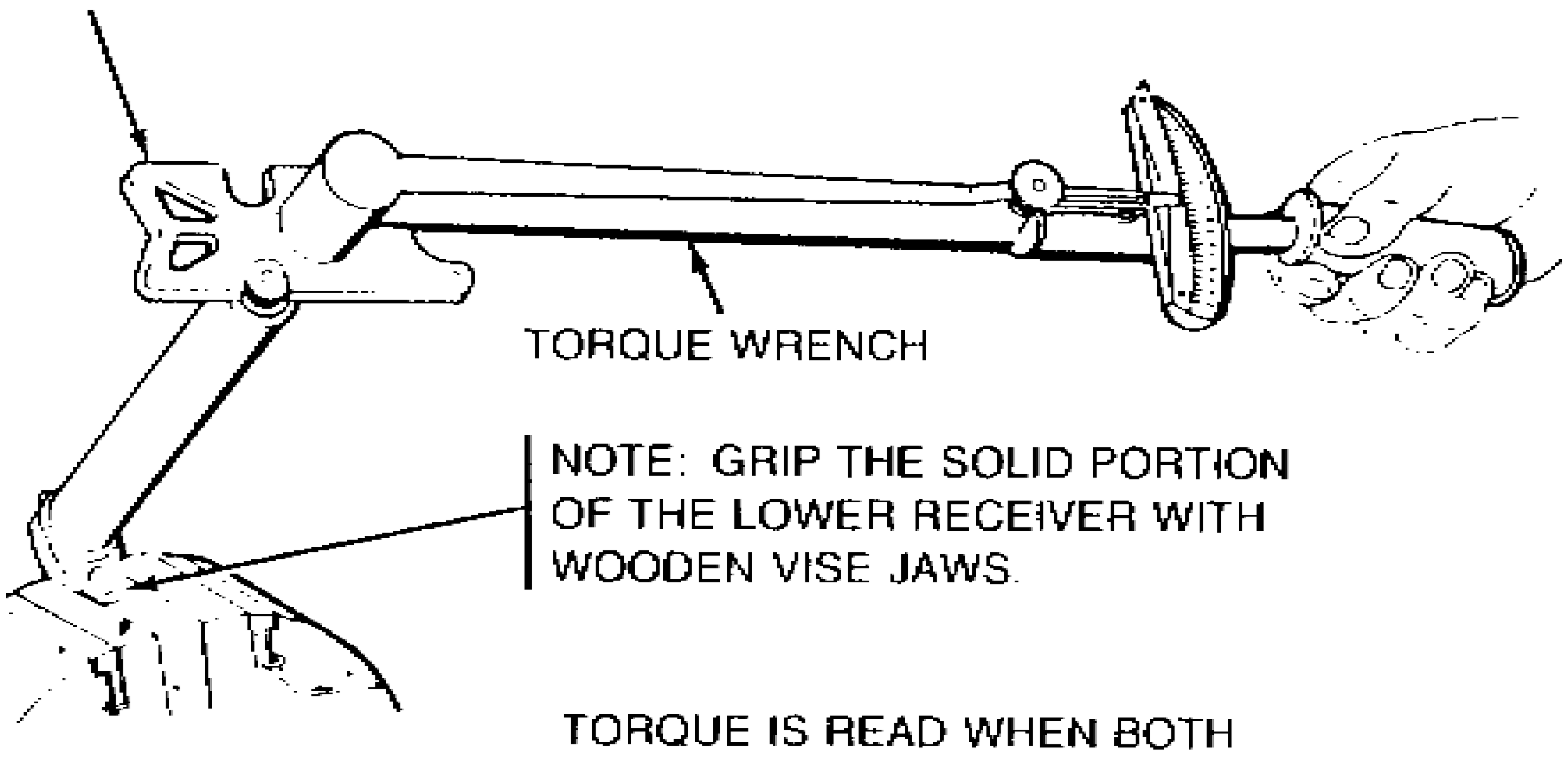
REASSEMBLY

Lower Receiver and Extension Subassembly		Lubricate threads of lower receiver and extension assembly with molybenum disulfide grease (item 11, app D) before reassembly.	
	a. Helical spring (1), lower receiver (2), and buffer retainer (3)	Install.	
	b. Lower receiver extension (4)	Install while depressing buffer retainer.	





		Torque using machinist's vise, vise jaw caps, combination wrench 11010033, and torque wrench, clamping solid portion of lower receiver torque to 35 - 39 ft-lb.	Use wooden vise jaws in machinist's vise in place of brass vise jaw caps, if available.

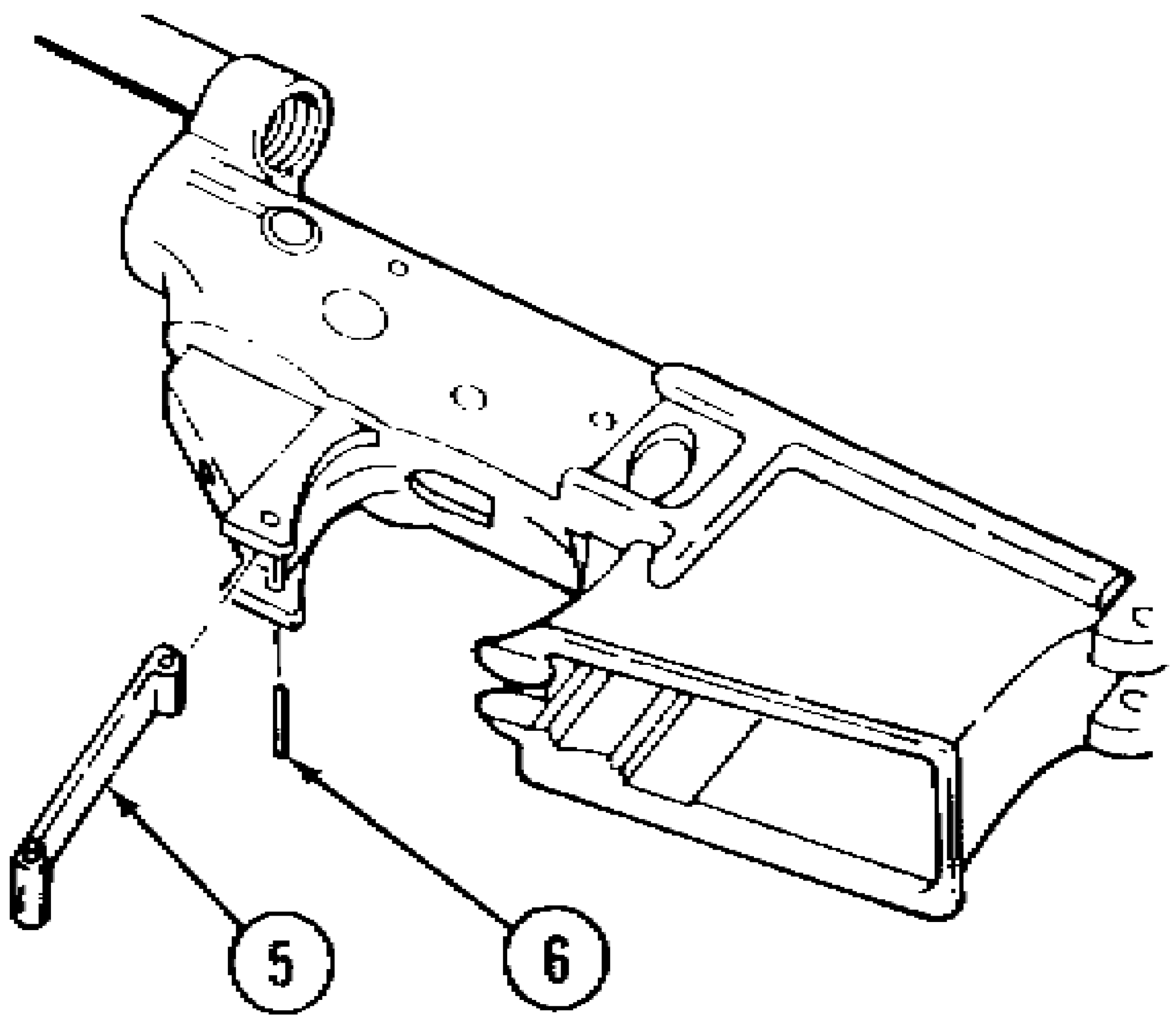


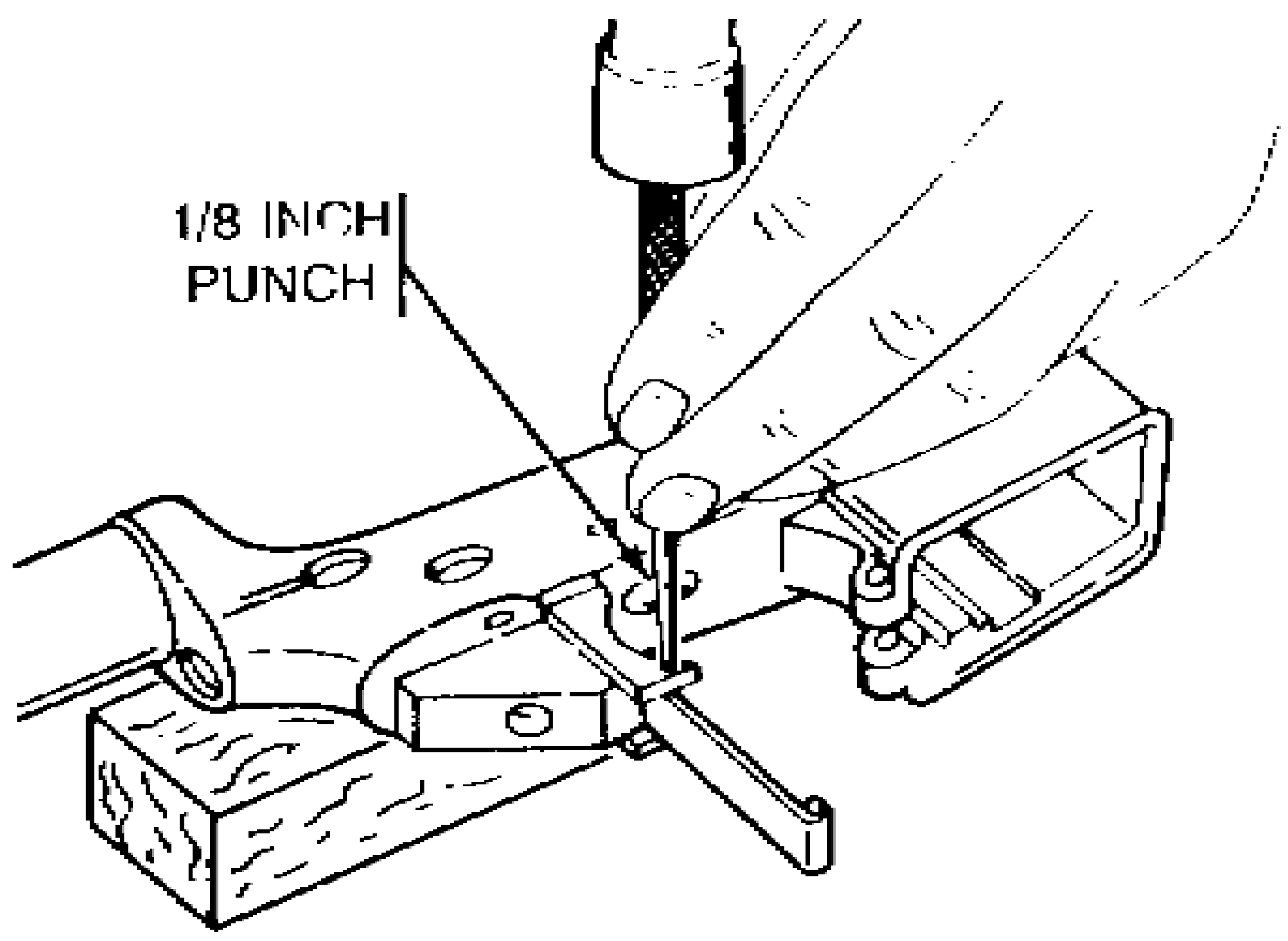
3-20. LOWER RECEIVER AND EXTENSION ASSEMBLY (CONT).

LOCATION	ITEM	ACTION	REMARKS

REASSEMBLY (CONT)

LOCATION	ITEM	ACTION	REMARKS
	c. Trigger guard (5)	Install.	
	d. Spring pin (6)	Install using 1/8 inch drive pin punch and hand hammer.	





3-21. MAJOR COMPONENTS OF M16 AND M16A1 RIFLE.

This task covers:
a. Reassembly
b. Test

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)
M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8426685 (19204)

References
TM 9-1005-249-10

Equipment Condition
Weapon assembled

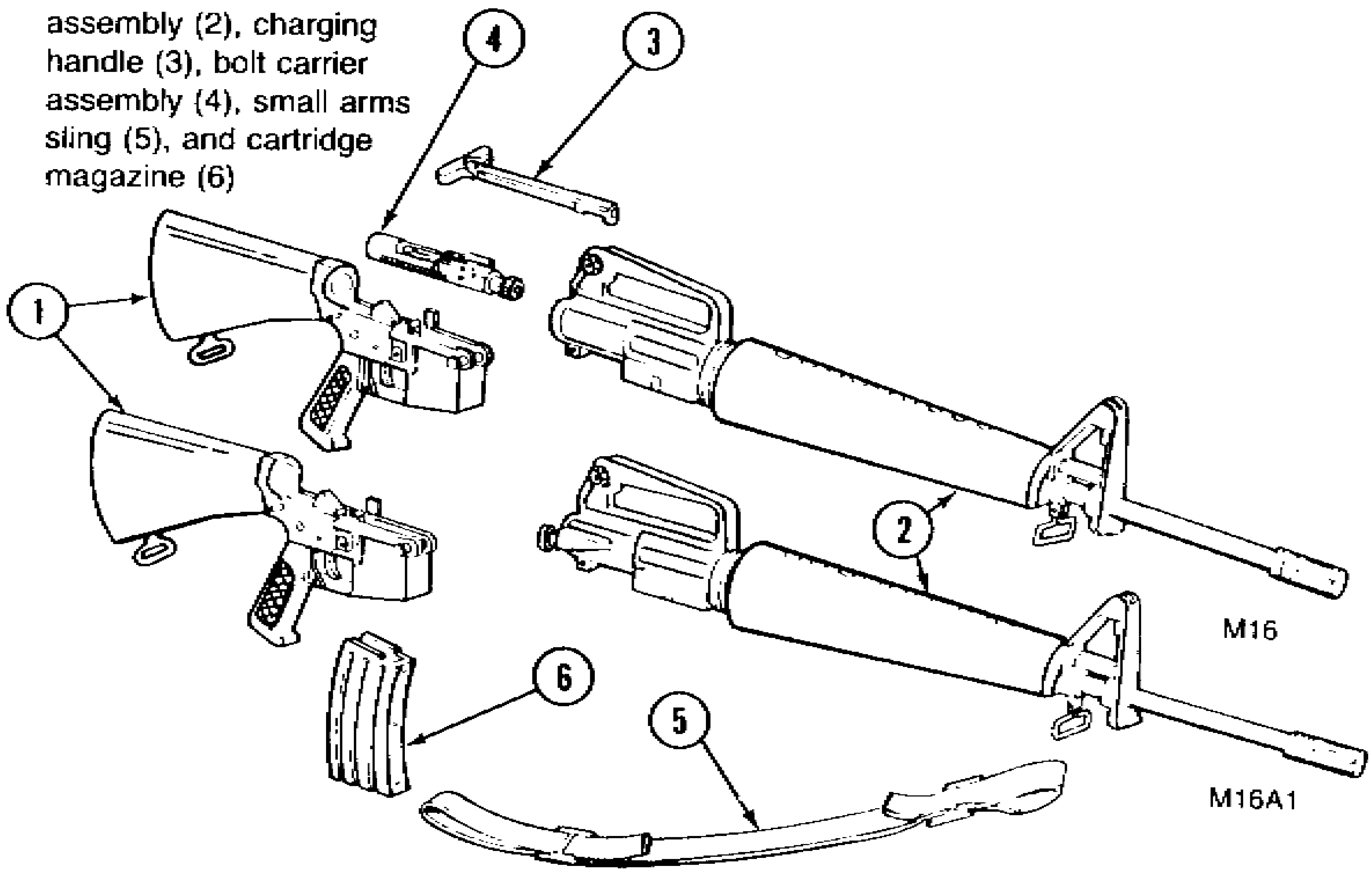
General Safety Instructions
To avoid injury to your eye, use care when removing and installing spring-loaded parts.

Live ammunition should not be near the work area.

LOCATION	ITEM	ACTION	REMARKS

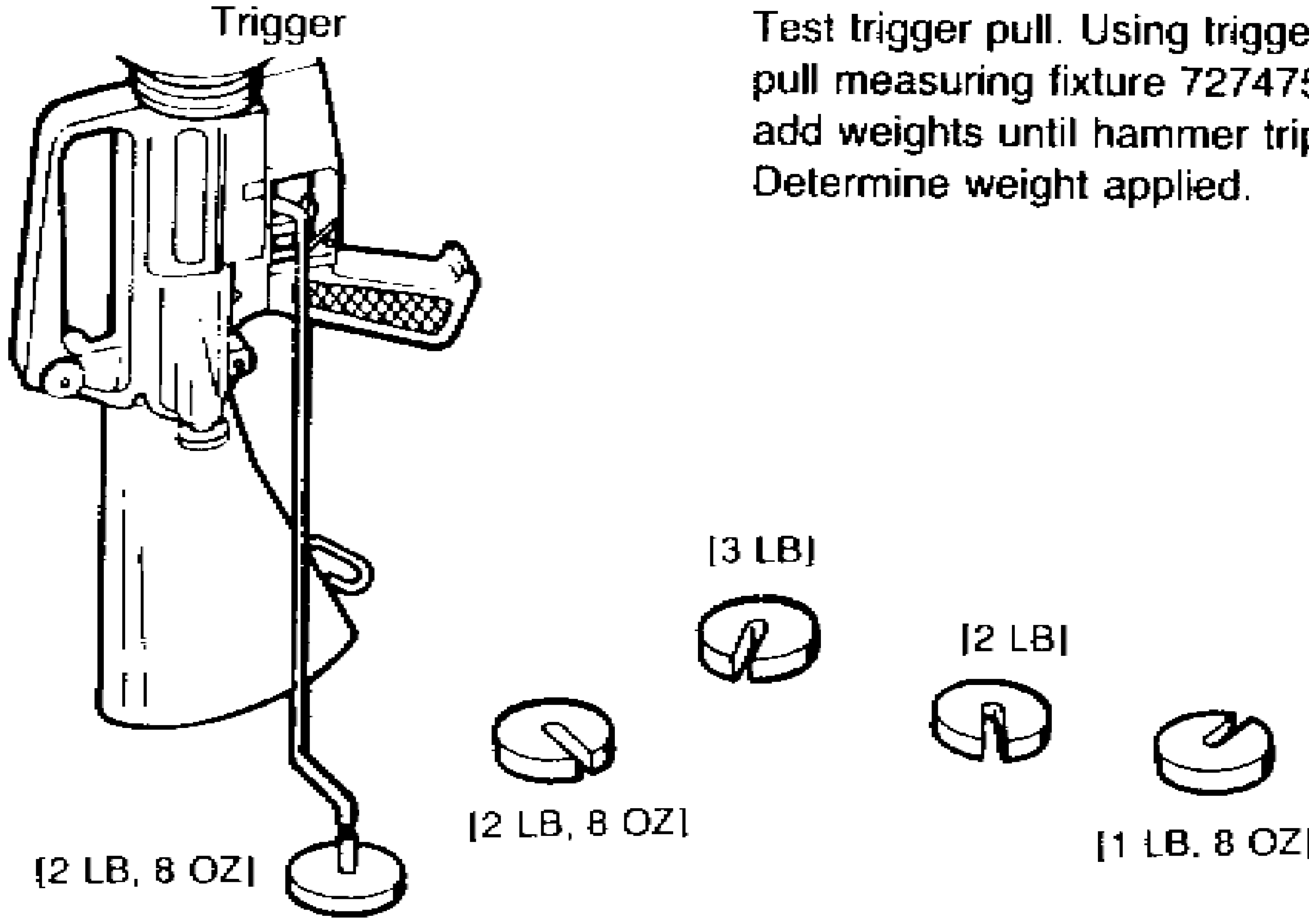
REASSEMBLY

Weapon	Lower receiver assembly (1), upper receiver and barrel assembly (2), charging handle (3), bolt carrier assembly (4), small arms sling (5), and cartridge magazine (6)	Install.	Refer to TM 9-1005-249-10.



TEST

Weapon	Trigger	Test trigger pull. Using trigger pull measuring fixture 7274758, add weights until hammer trips. Determine weight applied.	Place weapon in SEMI position and hold weapon in vertical position. Hammer should not trip until 5 pounds have been applied, and it must trip prior to applying 8.5 pounds.



3-22. M16 AND M16A1 RIFLE FINAL INSPECTION.

This task covers:
a. Inspection
b. Test

INITIAL SETUP

Tools
M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage Set 8426685 (19204)

References
TM 9-1005-249-10

Equipment Condition
Weapon assembled

General Safety Instructions

Live ammunition should not be near the work area.

LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
Weapon	a. General appearance	Weapon should look almost new.	All metal surfaces are to have a dull, rust- or corrosion-resistant finish with no burrs or deep scratches.
	b. Barrel	Visually inspect for serviceability.	Barrels must be straight, clean, free of rust, powder fouling, and free of bulges and rings. Fine pitting is allowable.
	c. Weapon	Visually inspect for missing parts, serial numbers, steel parts, spring pins, and screws.	All parts must be attached, and all modifications must be applied. Serial numbers must be legible and steel parts must be rust free. Spring pins must be secure and screws must be tight.
		Functionally inspect key and bolt carrier assembly and gas tube alinement using the following procedures:	

LOCATION	ITEM	ACTION	REMARKS
		Step 1. Disengage the takedown pin and open the receiver.	Refer to TM 9-1005-249-10.
		Step 2. Remove bolt carrier assembly.	Refer to TM 9-1005-249-10.
		Step 3. Remove bolt assembly from bolt carrier assembly.	Refer to TM 9-1005-249-10.
		Step 4. Insert bolt carrier and key into upper receiver and barrel assembly.	The bolt assembly must not be installed while performing test.
		Step 5. Slide bolt carrier and key forward to detect binding between key and bolt carrier assembly and gas tube by feel.	Badly bent gas tube could cause damage to both the bolt key and bolt carrier assembly or the gas tube. A slightly bent gas tube will cause unnecessary wear of the carrier and key assembly and gas tube. Refer to TM 9-1005-249-10.
		Step 6. Correct slight binding by removing gun hand guards, and slightly bending gas tube in the gun handguard area while repeating step 5 above until no binding is detected. Badly bent gas tubes will be replaced and realined.	
		Step 7. Remove key and bolt carrier assembly from upper receiver and barrel assembly.	
		Step 8. Reassemble bolt assembly into key and bolt carrier assembly.	Refer to TM 9-1005-249-10.
		Step 9. Reinstall bolt carrier assembly into upper receiver and barrel assembly.	
		Functional inspection.	Make a functional check of the rifle while the selector lever is in SAFE, SEMI, and AUTO positions. The sequence is used for rapid complete check. Any portion of this check may be used alone to determine the operational condition of any specific fire selection.

2-21. MAJOR COMPONENTS OF M16/M16A1 RIFLE (CONT).

LOCATION	ITEM	ACTION	REMARKS
INSPECTION (CONT)			
	d. Charging handle	Pull to rear. Check to assure that chamber is clear.	Leave hammer in cocked position.
	e. Selector lever	Place in SAFE position and squeeze trigger.	Hammer should not fall.
		WARNING If weapon fails the following test, continued use of the weapon could result in injury to or death of personnel.	
		NOTE For the purpose of the following test "SLOW" is defined as 1/4 to 1/2 the normal rate of trigger release.	
		Place in SEMI position. Squeeze trigger.	Hammer should fall.
		Hold trigger to the rear, charge weapon, and release the trigger with a slow, smooth motion, without hesitations or stops, until the trigger is fully forward.	Hammer should not fall.
		Repeat this test five times, the weapon may not malfunction every time.	If the weapon malfunctions during any of these five tests, see page 3-50.
		Place in AUTO position. Charge weapon and squeeze trigger.	Hammer should fall.
		Hold trigger to the rear, charge weapon, and release trigger. Squeeze trigger.	Hammer should not fall. Automatic assembly sear should have released the hammer as the bolt closed.
	f. Magazine catch button	Press magazine catch button.	Make sure it functions properly.
	g. Bolt catch	Press.	Make certain it operates smoothly and holds bolts in open position.
	h. Front sight and rear sight	Adjust.	Make certain they can be adjusted properly. Refer to TM 9-1005-249-10.
	i. Forward assist assembly (M61A1 rifles only)	Actuate.	It must work freely.
TEST			
	a. Headspace	Check headspace using headspace gage 7799734	See page 3-40.
	b. Firing pin	Check firing pin protrusion using firing pin protrusion gage 7799735.	See page 3-14.
	c. Barrel	Check barrel erosion using barrel erosion gage 8448496 or 7799792 and 8448677	See pages 3-37 and 3-39.

3-23. M16 AND M16A1 RIFLE ANNUAL INSPECTION AND GAGING REQUIREMENTS.

This task covers:

a. Inspection

b. Gaging

INITIAL SETUP

Tools

- DA Form 2407
- Small Arms Repair Tool Kit SC 5180-95-CL-A07 (19204)
- Field Maintenance Basic Less Power Small Arms Shop Equipment SC 4933-95-CL-A11 (19204)
- M16 Series and M231 Firing Port Weapon Direct Support and General Support Maintenance for 5.56-mm Rifle Tool and Gage set 8426685 (19204)

References

TM 9-1005-249-10

Equipment Condition

Weapon assembled

General Safety Instructions

To avoid injury to your eye, use care when removing and installing spring-loaded parts.



Before starting an inspection on a weapon equipped with a low light level sight, check for damage to the sight and decontaminate if required. See procedures on page 2-14.

All M16/M16A1 rifles must be inspected and gaged at least once annually for safety.

LOCATION	ITEM	ACTION	REMARKS

INSPECTION

LOCATION	ITEM	ACTION	REMARKS
Weapon	General appearance	Overall appearance will be approximately that of a new weapon.	Refer to final inspection page 3-74. All visual and functional inspection requirements should be met.

NOTE

Disassemble weapon only as required for gaging using TM 9-1005-249-10.

3-23. M16 AND M16A1 RIFLE ANNUAL INSPECTION AND GAGING REQUIREMENTS.

LOCATION	ITEM	ACTION	REMARKS
GAGING			
1 Weapon	a. Bolt carrier assembly	Gage firing pin protrusion using firing pin protrusion gage 7799735.	See page 3-14.
		Gage firing pin hole using not-go plug gage 12620101.	See page 3-14.
	b. Upper receiver and barrel assembly	Inspect chamber using chamber reflector tool 8448201.	See page 3-28.
	c. Upper receiver and barrel assembly	Gage barrel using barrel erosion gage 7799792 or 8448496 as applicable, muzzle erosion gage 8448677 on nonchromed barrels only, and bore straightness gage 8448202.	See pages 3-37 through 3-39.
	d. Upper receiver and barrel assembly	Check headspace by inserting headspace gage 7799734 in chamber.	See page 3-40.
	e. Lower receiver and extension assembly	Gage hammer and trigger pin holes using not-go plug gage 126006472.	See page 3-59.
	f. Weapon	Gage trigger pull using trigger pull measuring fixture 7274758.	See page 3-73.
2 Document	DA Form 2407	Document inspection when completed.	

Section VI. PREEMBARKATION INSPECTION OF MATERIEL IN UNITS ALERTED FOR OVERSEAS MOVEMENT

3-24. GENERAL. Refer to TB 9-1000-247-34.

CHAPTER 4
MAINTENANCE OF AUXILIARY EQUIPMENT

CHAPTER OVERVIEW

This chapter contains information and instructions to keep auxiliary equipment used with your weapon in good repair. The chapter contains:

a. Organizational Auxiliary Equipment
b. Direct Support and General Support Auxiliary Equipment

Section I. ORGANIZATIONAL AUXILIARY EQUIPMENT

4-1. GENERAL.

a. The following materiel is used in conjunction with the M16/M16A1 rifle:

(1) Bayonet-Knife M7
(2) Bayonet-Knife Scabbard M8A1 or M10
(3) 40-mm Grenade Launcher M203
(4) Low light level sights
(5) Lock Plate
(6) Top Sling Adapter
(7) Rifle Bipod M3
(8) Bipod carrying case
(9) Blank Firing Attachment M15A2

b. Refer to TM 9-1010-221-24&P for organizational maintenance for the Grenade Launcher M203.

c. Refer to TM 9-1005-237-15P for repair parts on Bayonet-Knife M7 and Bayonet-Knife Scabbard M8A1.

4-2. BAYONET-KNIFE M7.

This task covers:

a. Installation
b. Removal
c. Disassembly
d. Inspection/Repair
e. Reassembly

INITIAL SETUP

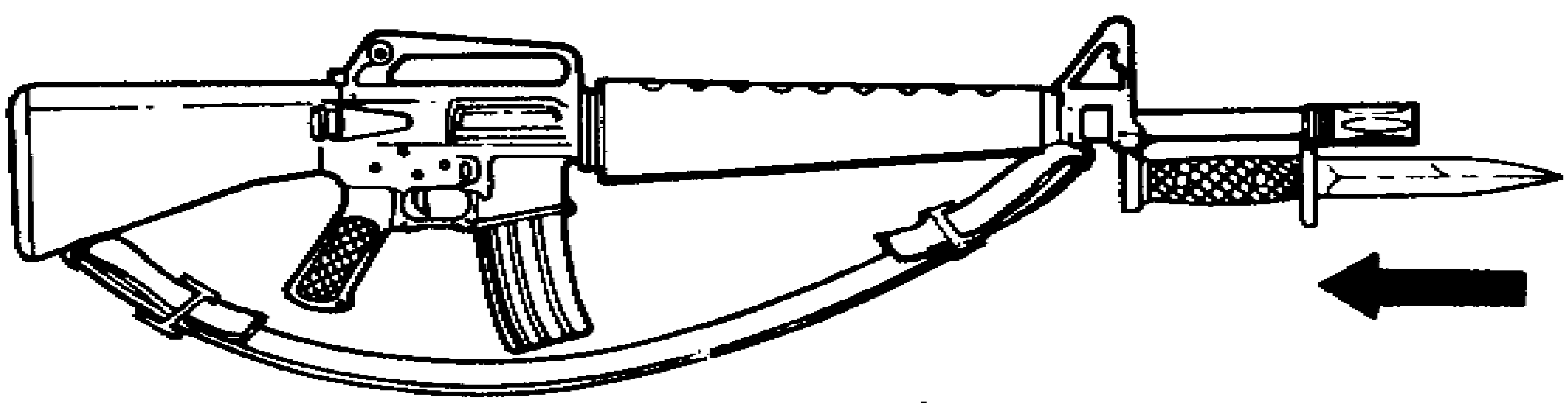
References
TM 9-1005-237-15P

General Safety Instructions
Keep tip of blade pointed away from body at all times.

LOCATION	ITEM	ACTION	REMARKS

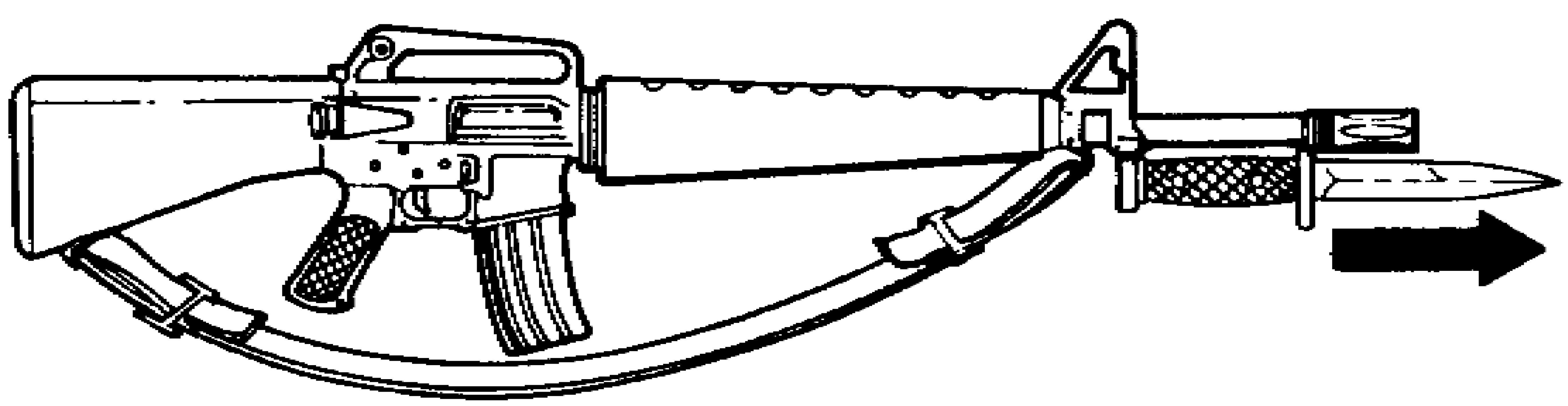
INSTALLATION

LOCATION	ITEM	ACTION	REMARKS
Rifle M16/M16A1	Bayonet-Knife M7	Install.	



REMOVAL

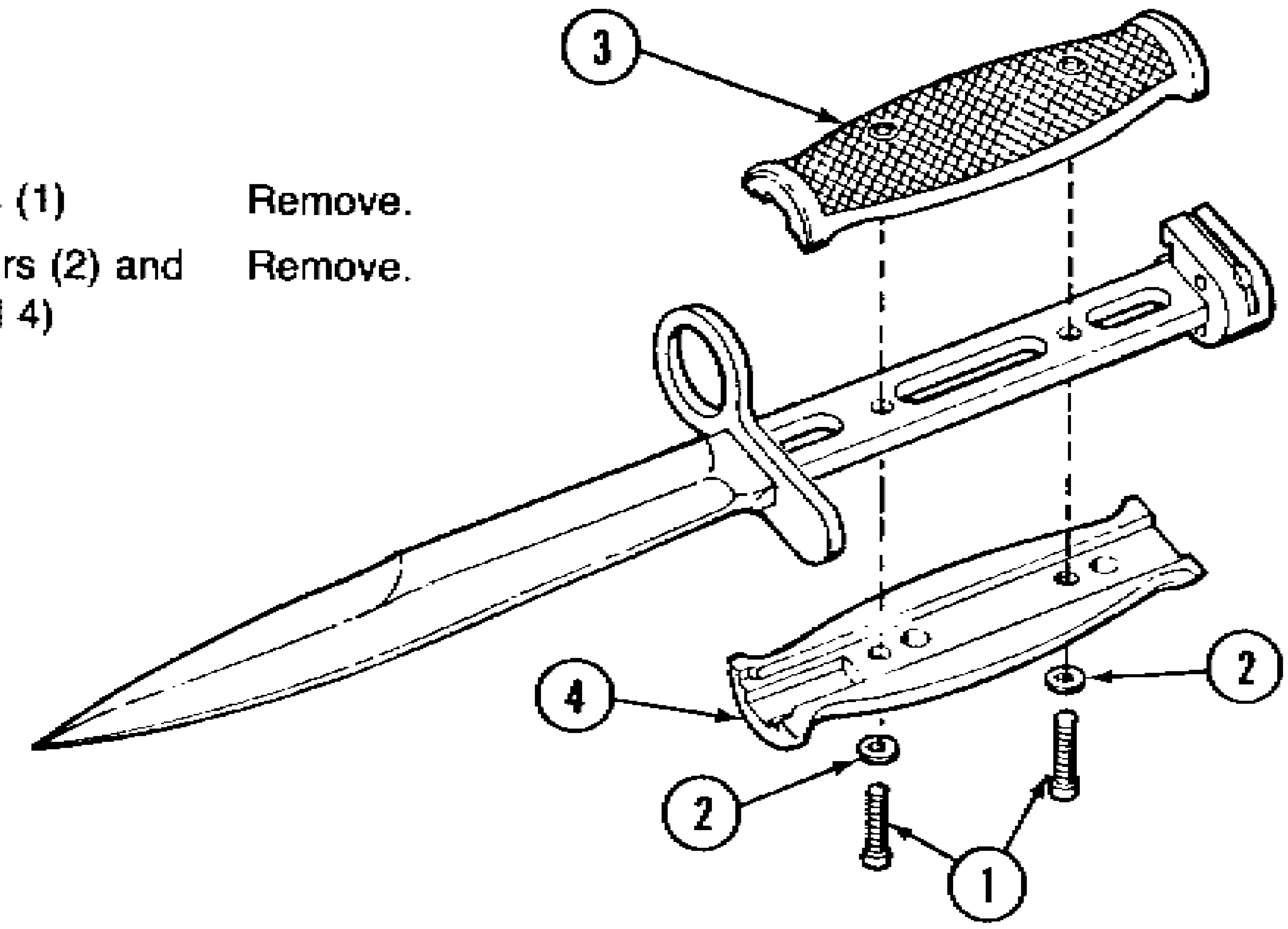
LOCATION	ITEM	ACTION	REMARKS
Rifle M16/M16A1	Bayonet-Knife M7	Remove.	



LOCATION	ITEM	ACTION	REMARKS

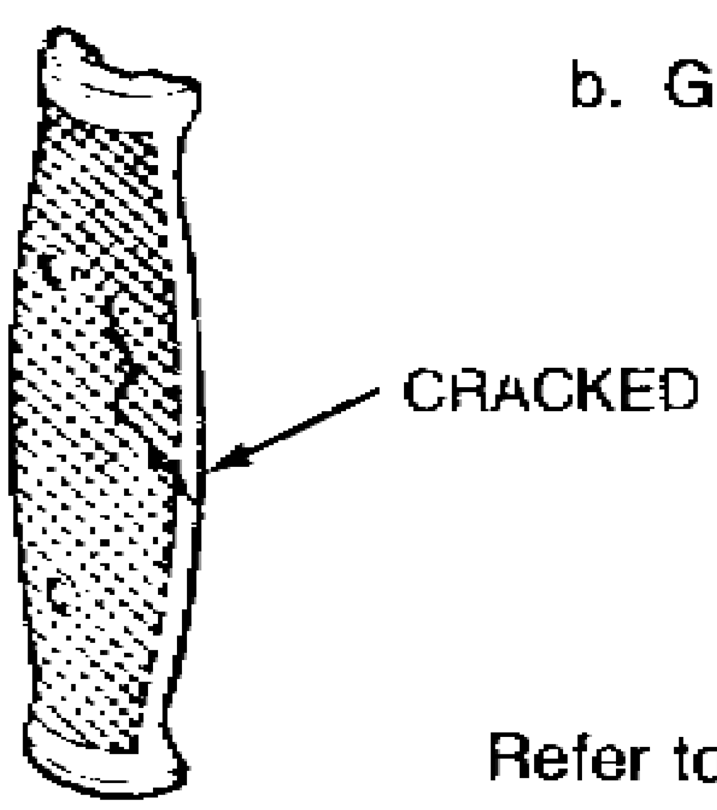
DISASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Bayonet-Knife M7	a. Grip screws (1)	Remove.	
	b. Lock washers (2) and grips (3 and 4)	Remove.	



INSPECTION/REPAIR

LOCATION	ITEM	ACTION	REMARKS
Bayonet-Knife M7	a. Grip screws	Inspect threads and replace if stripped or damaged.	
	b. Grips	Inspect for cracks in both grips and for stripped threads in the left grip.	Notify support maintenance if grips are cracked or if grip screws have stripped threads.



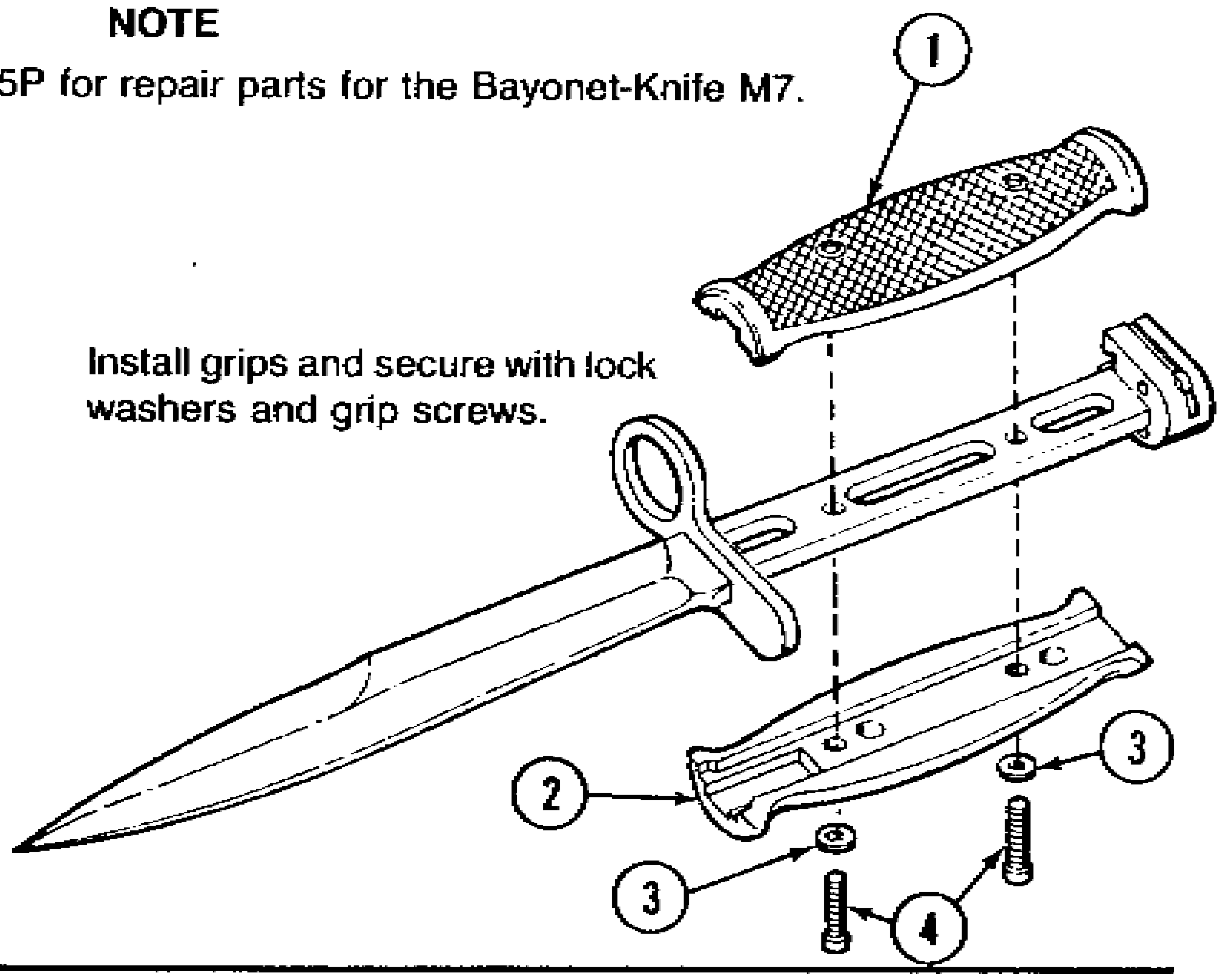


NOTE

Refer to TM 9-1005-237-15P for repair parts for the Bayonet-Knife M7.

REASSEMBLY

LOCATION	ITEM	ACTION	REMARKS
Bayonet-Knife M7	Grips (1 and 2), lock washers (3), and grip screws (4)	Install grips and secure with lock washers and grip screws.	



4-3. BAYONET-KNIFE SCABBARD M8A1 OR M10.

This task covers inspection/repair.

INITIAL SETUP

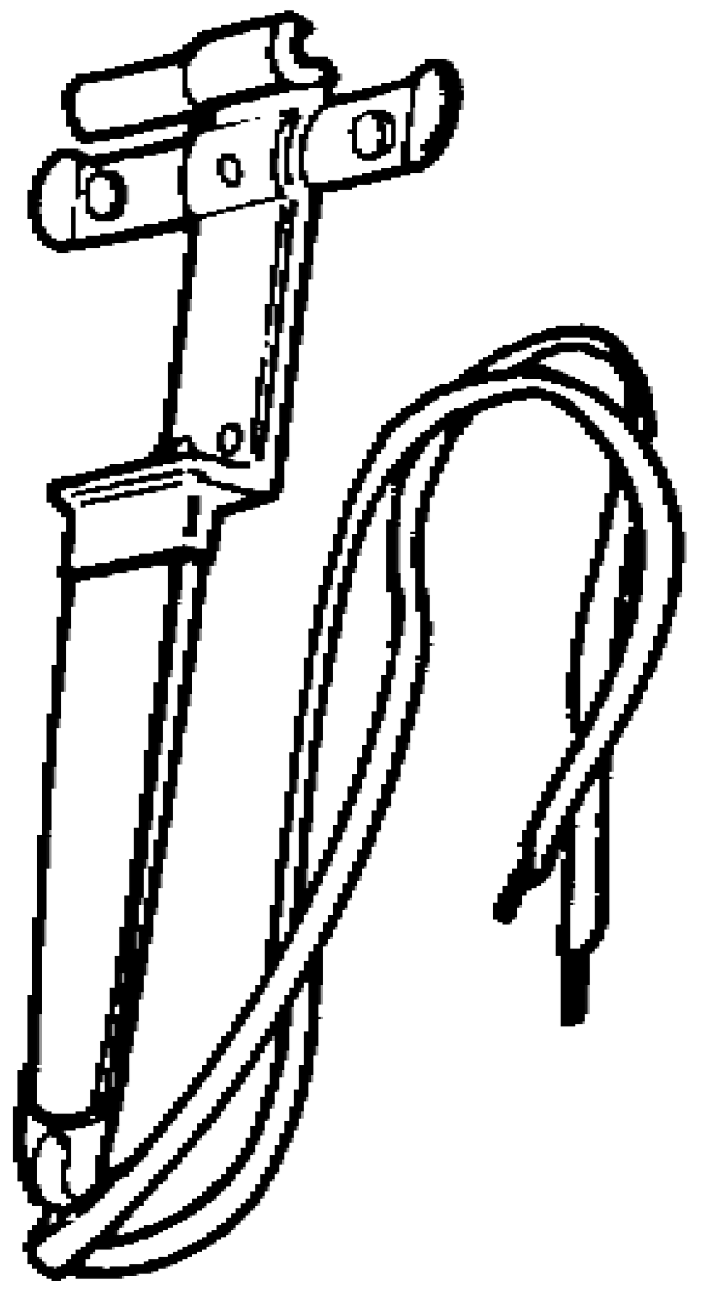
Materials/Parts

Olive drab enamel (item 10, app D)
Solid film lubricant (item 13, app D)

LOCATION	ITEM	ACTION	REMARKS

INSPECTION/REPAIR

LOCATION	ITEM	ACTION	REMARKS
Bayonet-Knife Scabbard M8A1 or M10	All parts	Inspect metal parts. They must be dark. Worn metal area will be repaired by applying solid film lubricant (item 13, app D).	
		Inspect scabbard for chipped or exposed fabric and scratched or marred surfaces.	
		Repair by smoothing, as required, and paint with olive drab enamel (item 10, app D).	
		Inspect lace. Clean and/or replace damaged lace.	



4-4. LOW LIGHT LEVEL FRONT SIGHT.

This task covers:

a. Installation
b. Disassembly
c. Inspection
d. Reassembly
e. Wrapping and Packaging

INITIAL SETUP

Tools
Low light level sight removal/installation tool (E-2, app E)

References
Warning page radiation hazard

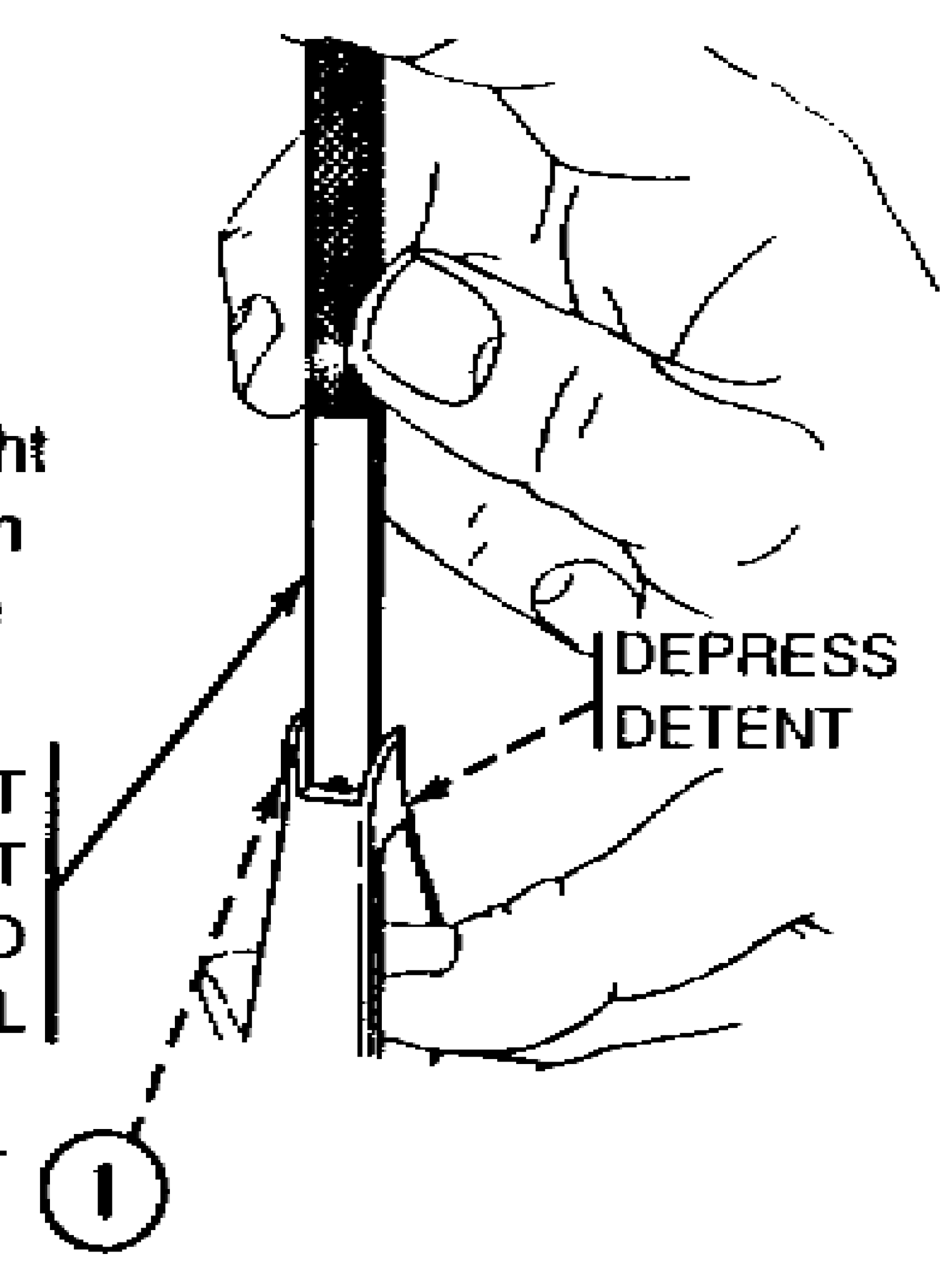
General Safety Instructions
Low light level sights will be removed from weapons that are being transferred or unserviceable or are being disposed.

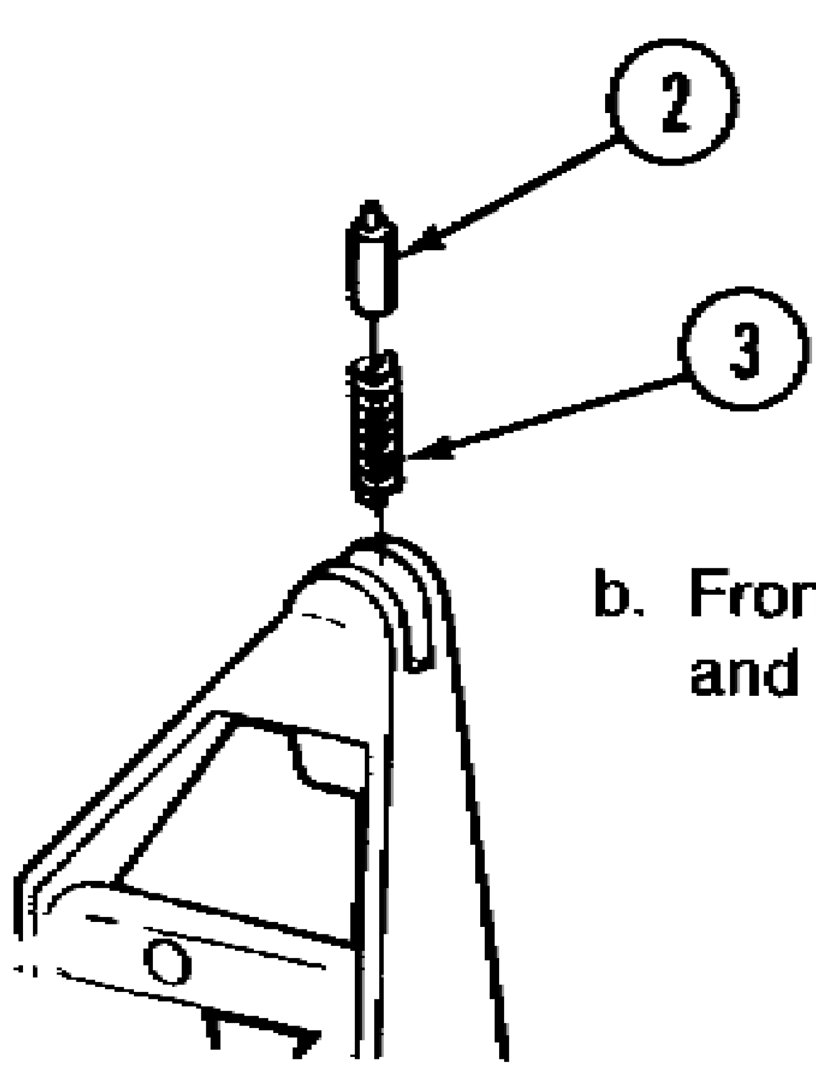
Low light level front sight contains radioactive material.

Do not insert metal objects into the post slot or otherwise treat sight roughly to cause breakage of the radioactive element.

Do not eat, drink, or smoke while working on the low light level sights.

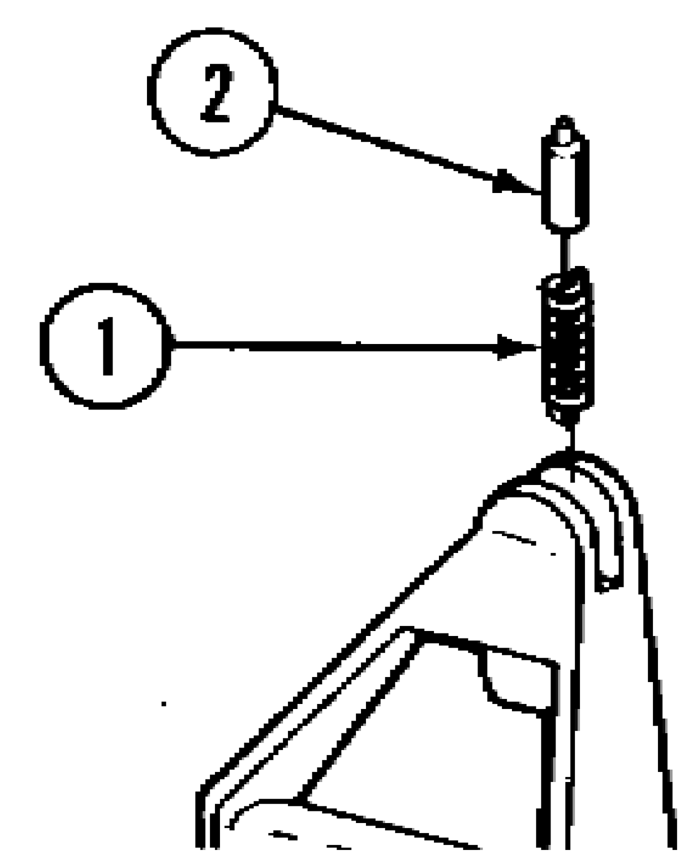
LOCATION	ITEM	ACTION	REMARKS
INSTALLATION			
Rifle Barrel	Front low light level sight (1)	Install using procedures for standard sight	See page 2-32.
DISASSEMBLY			
Rifle Barrel	a. Front low light level sight (1)	Using low light level front sight post removing and installation tool (E-2, app E), remove the front low light level sight.	
	b. Front sight detent (2) and helical spring (3)	Catch front sight detent and helical spring to prevent loss.	

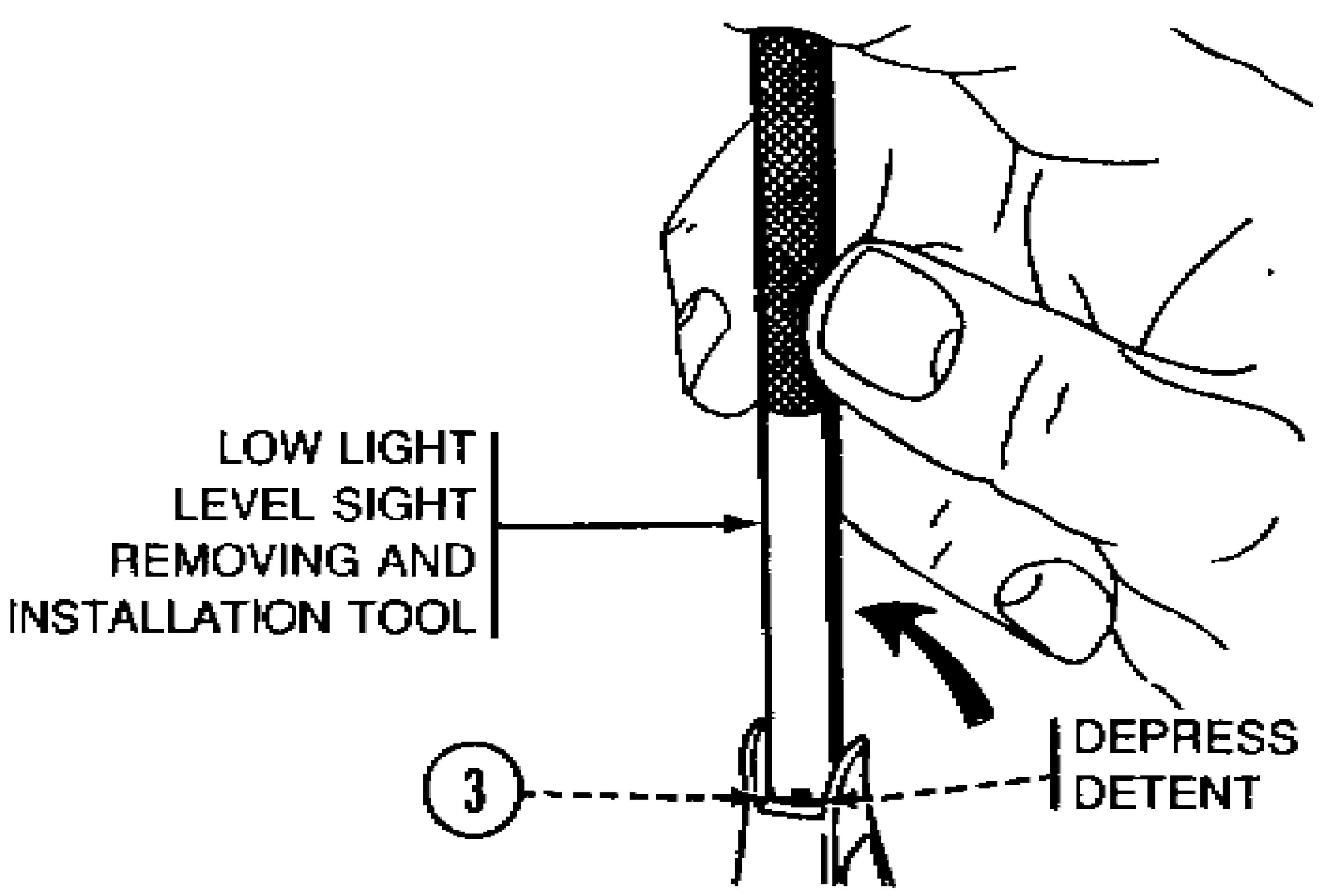




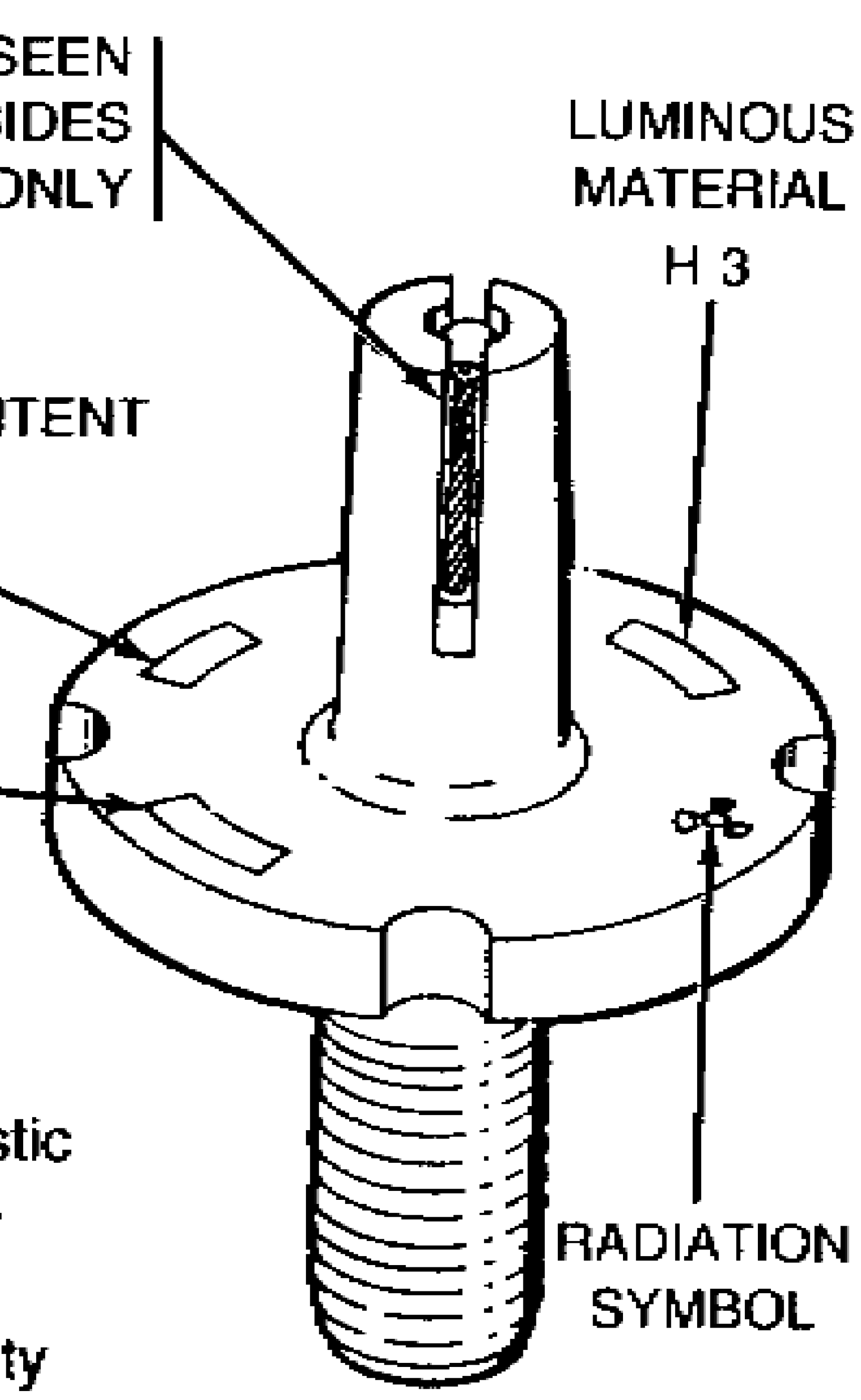
4-4. LOW LIGHT LEVEL FRONT SIGHT (CONT).

LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
Low Light Level Sight	Front low light level sight	Inspect for broken or damaged radioactive element. Inspect manufacturer's data. Replace if more than 144 months have elapsed.	
REASSEMBLY			
Low Light Level Sight	a. Helical spring (1) and front sight detent (2)	Position and hold helical spring and front sight detent.	
	b. Front low light level sight (3)	Install using low light level sight tool (E-2, app E)	





LOCATION	ITEM	ACTION	REMARKS
WRAPPING AND PACKAGING			
Low Light Level Sight		Broken sight post will be removed and placed in a plastic bag. All defective and/or out-dated components will be returned to the storage activity for disposal in accordance with AR 385-11.	



FRONT LOW LIGHT LEVEL POST ASSEMBLY

LOCATION	ITEM	ACTION	REMARKS

NOTE

Ensure that the rear sight is the rear low light level sight. If not, you must have direct support maintenance replace the standard rear sight with the rear low light level sight as the sights must mate. Refer to page 4-24.

Low light level systems that have been removed from rifles will be protected by applying a protective, chemically-neutral paper conforming to MIL-P-17667 (SB 38-100) and placed in a plastic bag. Final packaging will be in accordance with instructions provided in MIL-STD-1169, pending possible reuse or disposal. These packaging criteria are furnished since a terminal test for radiation and luminosity will be required.

4-5. LOCK PLATE.

This task covers:
a. Installation
b. Removal
c. Inspection

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CL-A07 (19204)

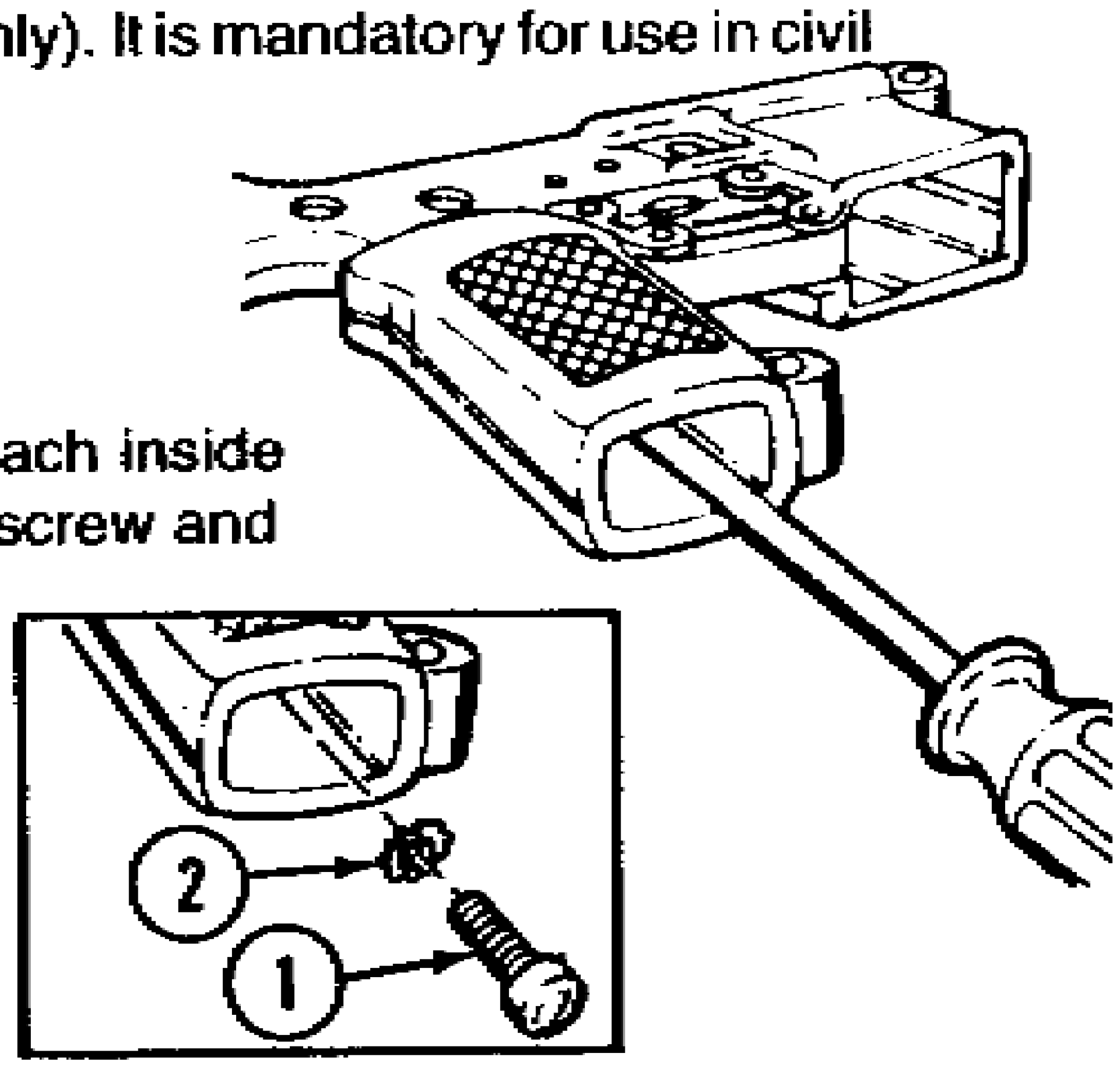
LOCATION	ITEM	ACTION	REMARKS

WARNING

The lock plate prevents the selector from being placed in AUTO and will be installed at the discretion of the unit commander. Required for civil disturbance (riot control units only). It is mandatory for use in civil disturbance (riot control).

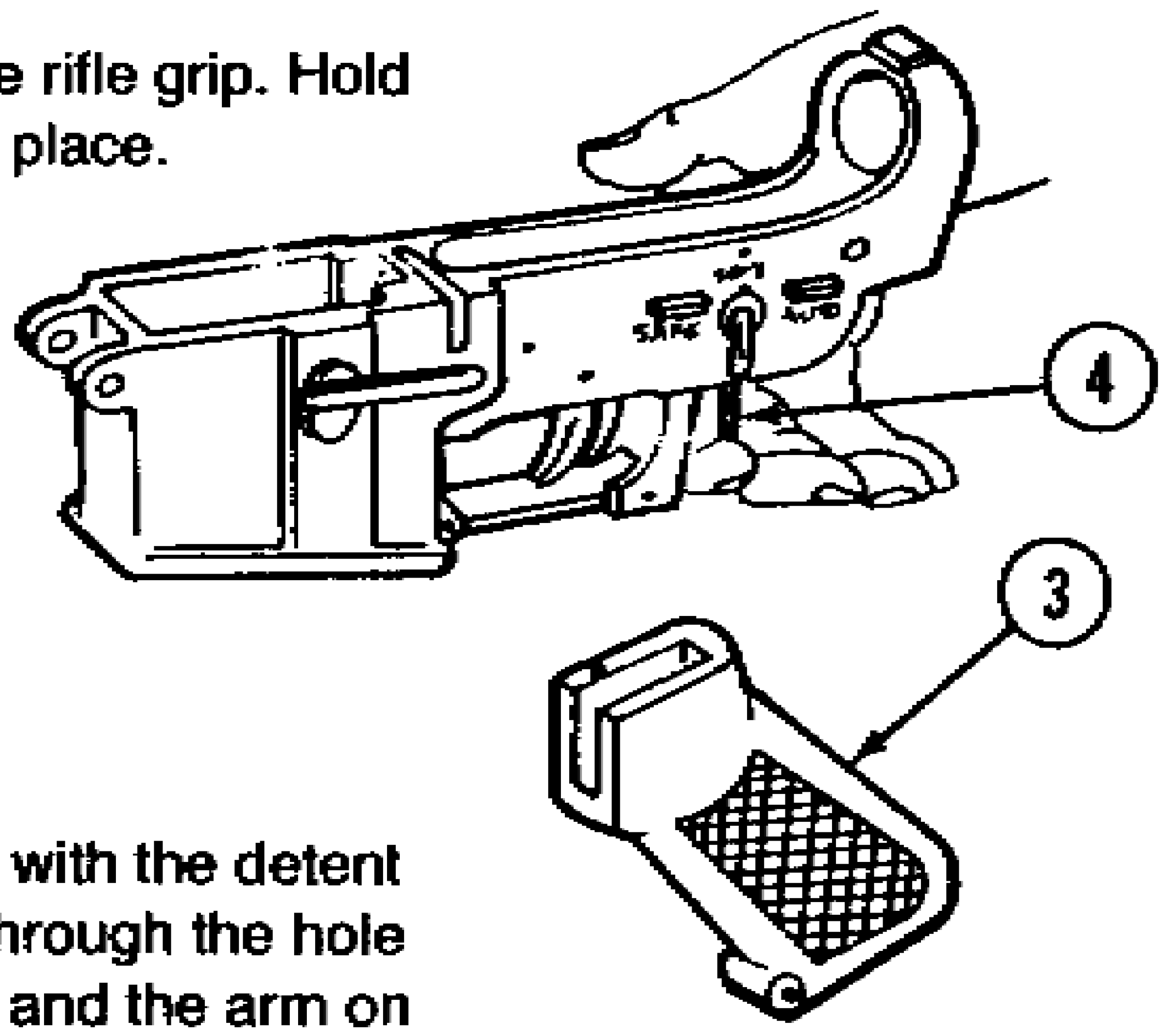
INSTALLATION

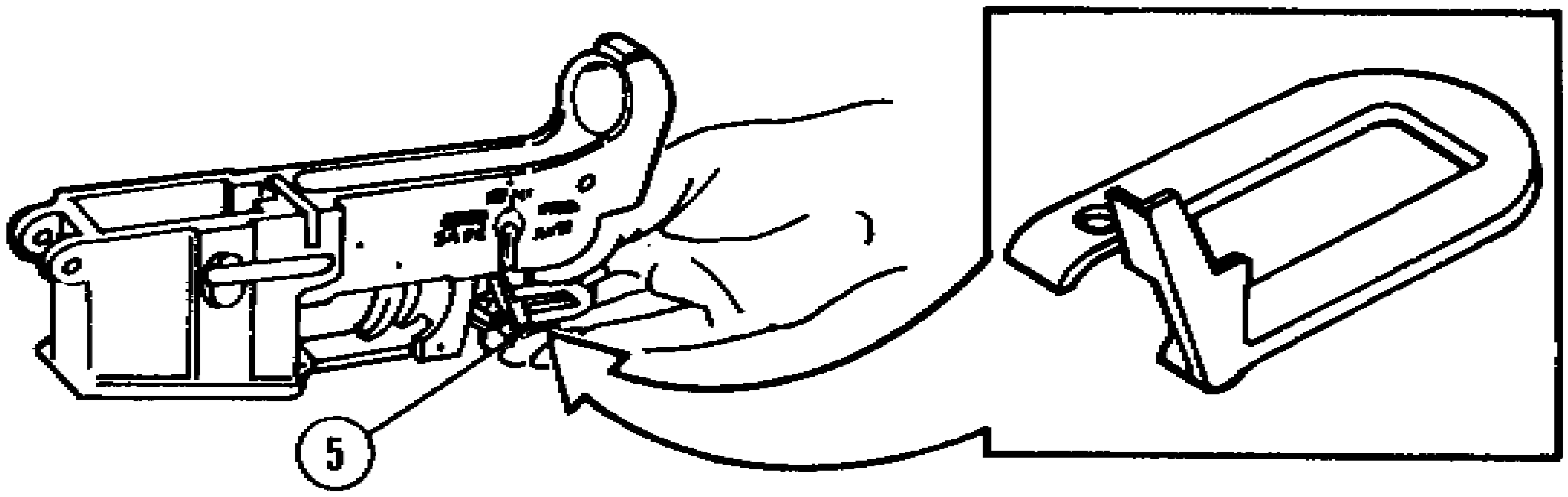
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	a. Screw (1) and lock washer (2)	Using screwdriver, reach inside rifle grip and remove screw and lock washer.	

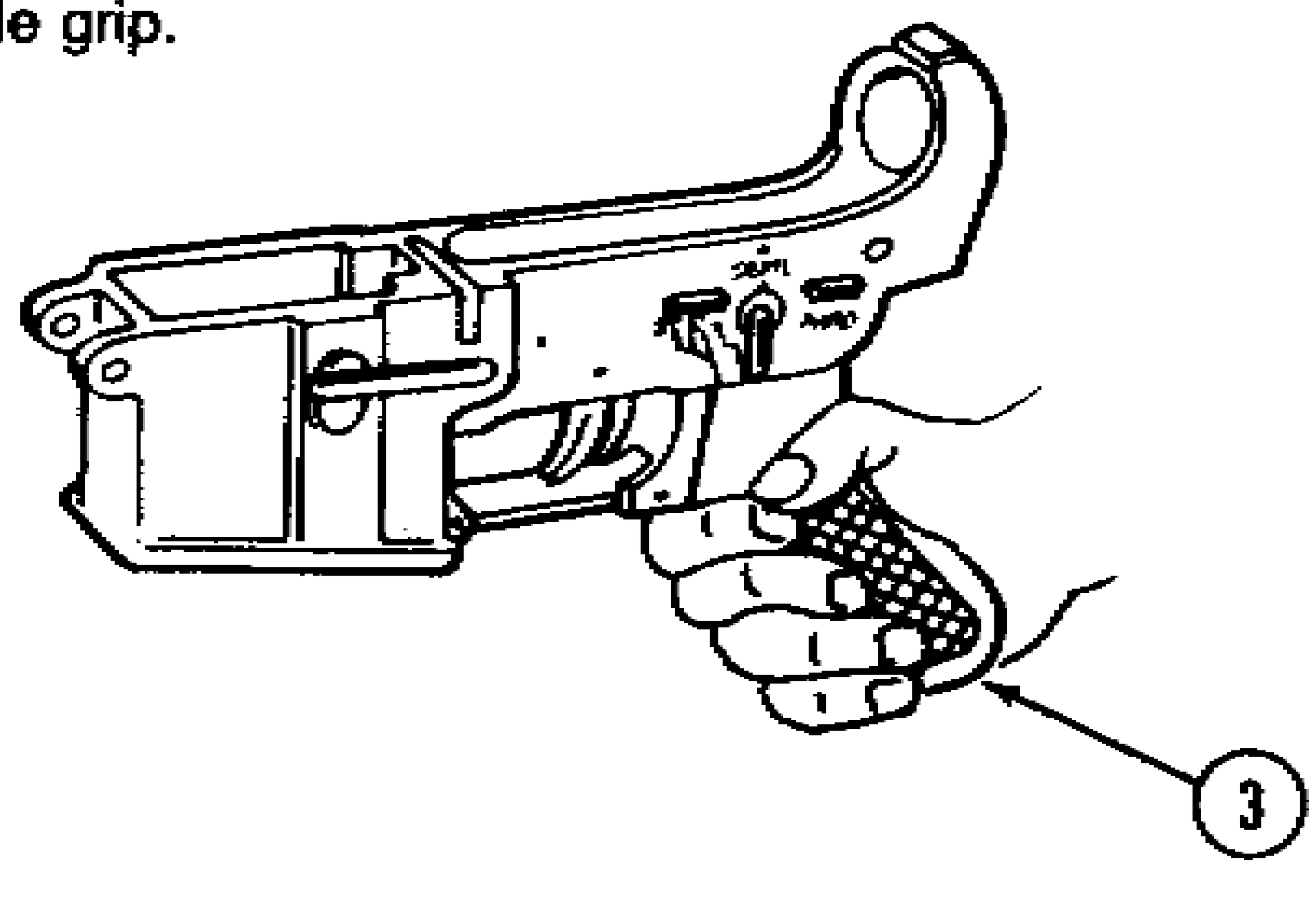


4-5. LOCK PLATE (CONT)

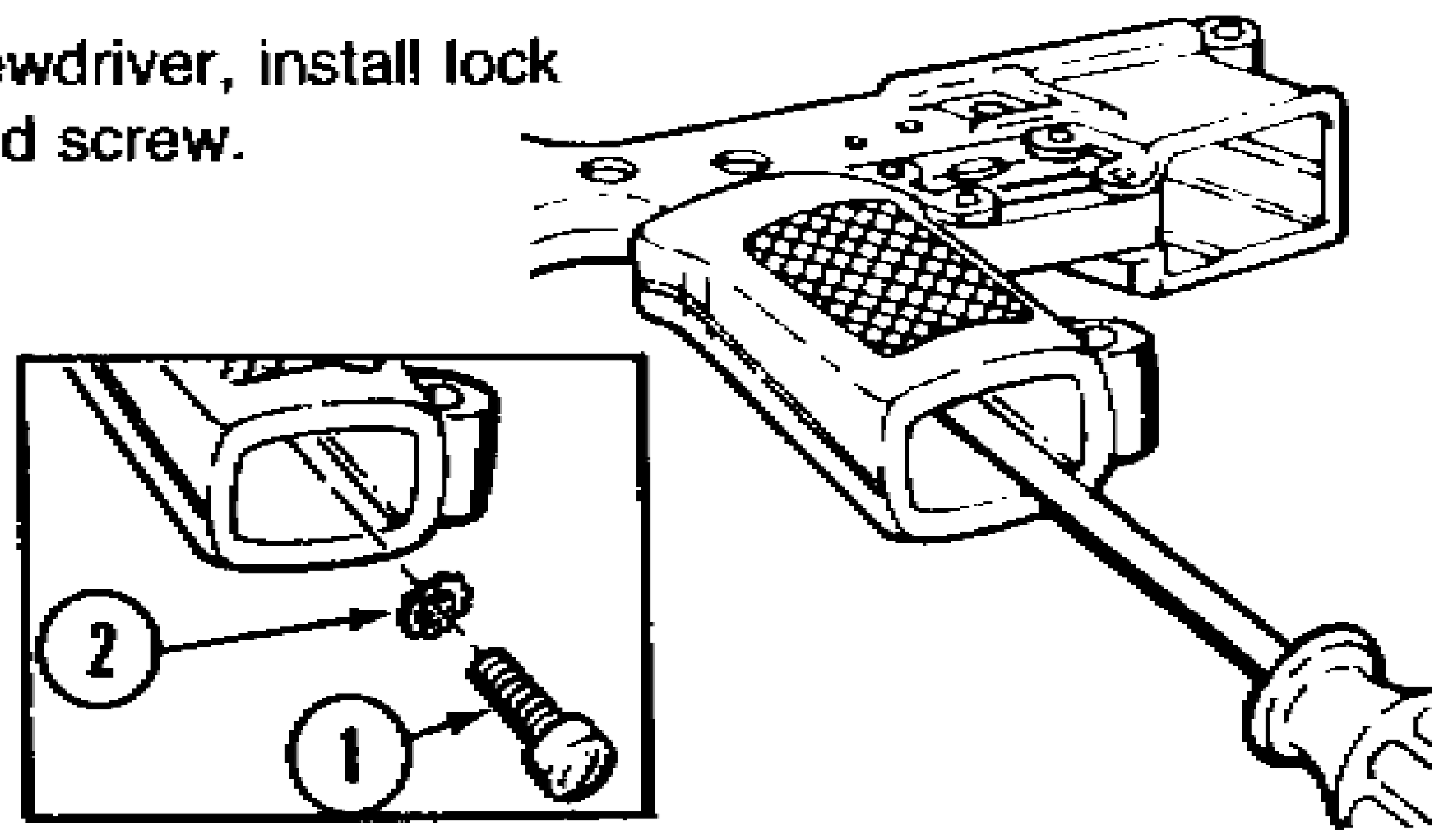
LOCATION	ITEM	ACTION	REMARKS
INSTALLATION (CONT)			
	b. Rifle grip (3) and helical spring (4)	Carefully remove rifle grip. Hold helical spring in place.	
	c. Lock plate (5)	Install lock plate with the detent spring passing through the hole in the right side, and the arm on the outside of the receiver and pointing to the SAFE position.	
	d. Rifle grip (3)	Carefully compressing spring, install rifle grip.	





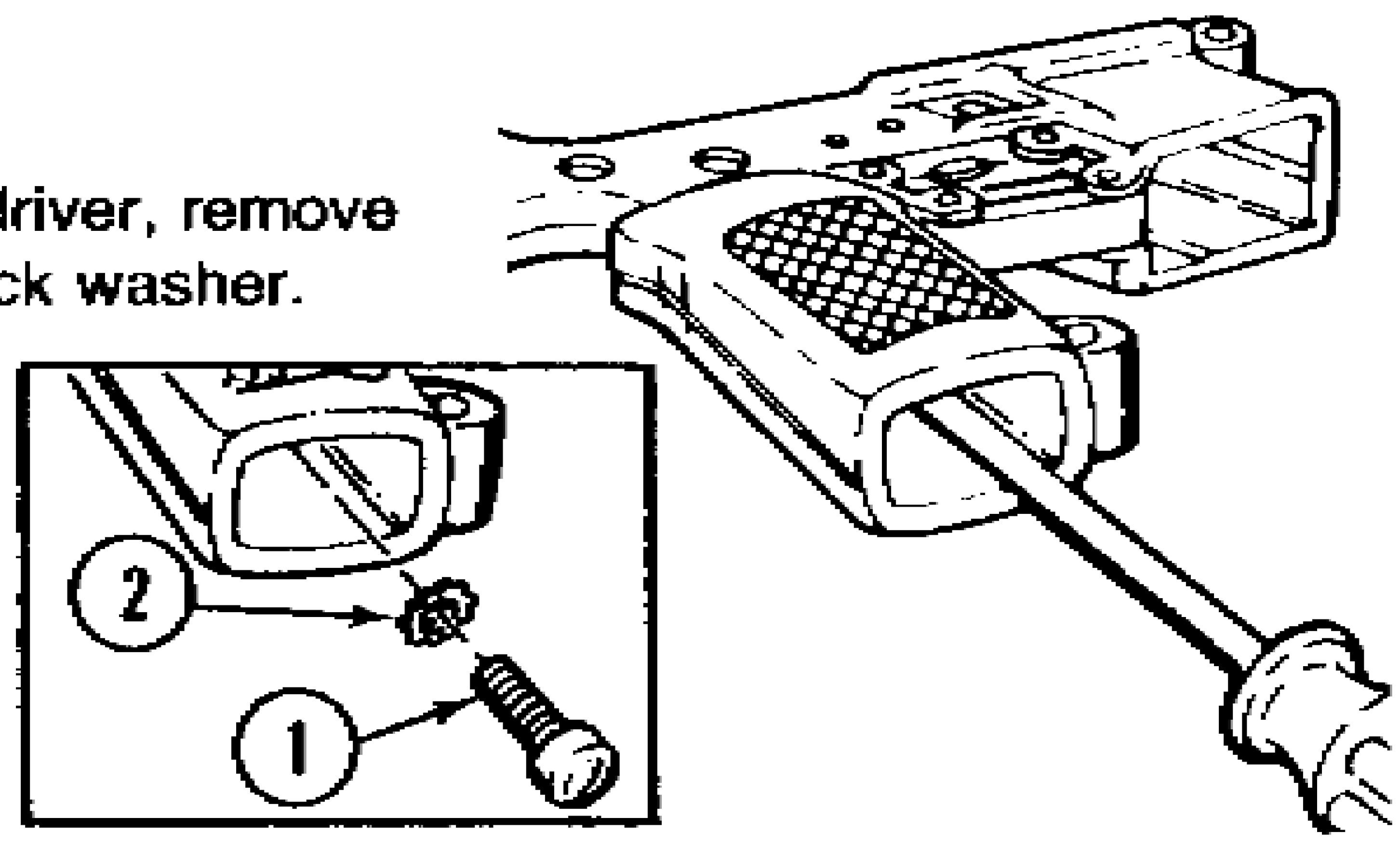


LOCATION	ITEM	ACTION	REMARKS
	e. Lock washer (2) and screw (1)	Using screwdriver, install lock washer and screw.	

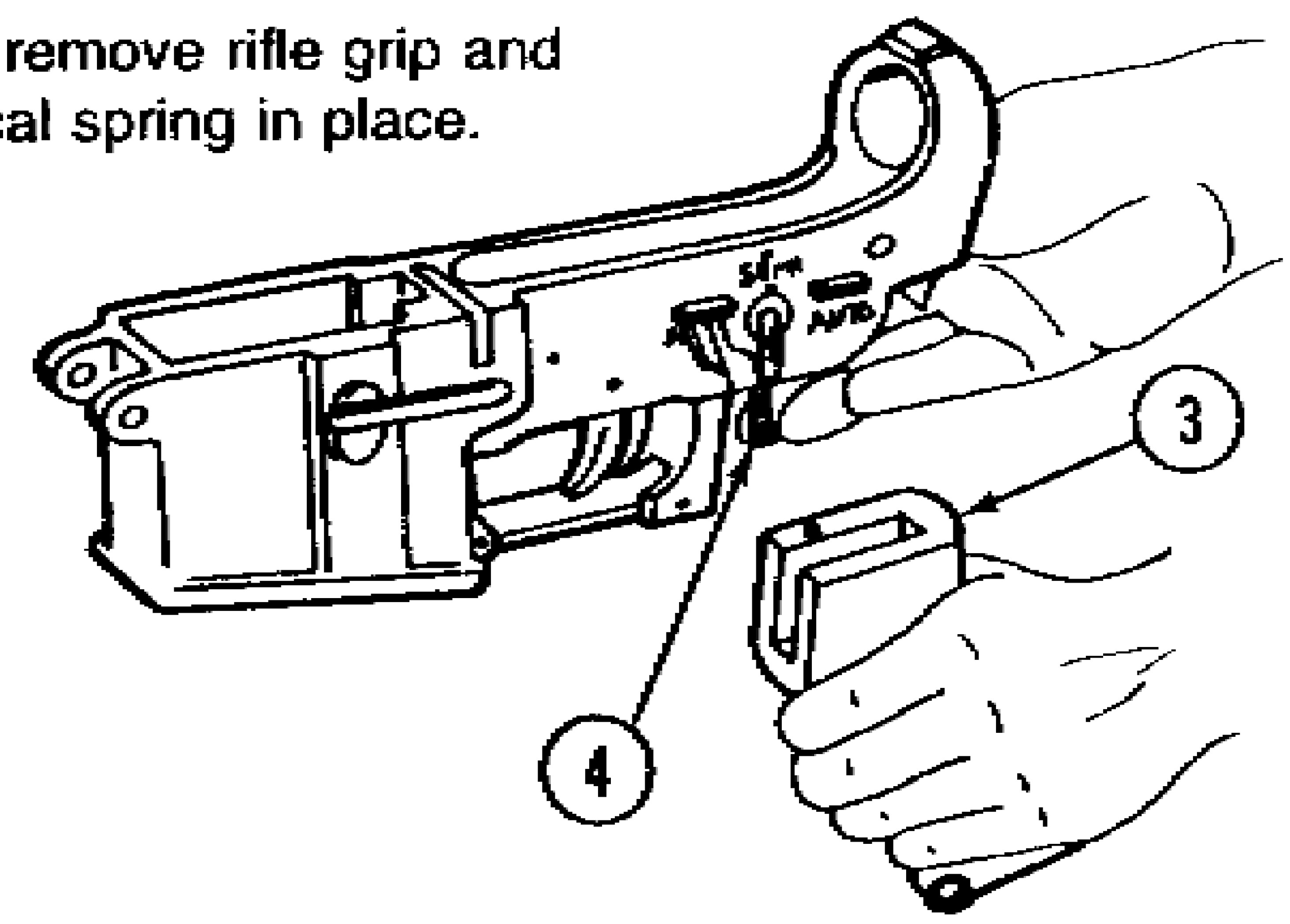


REMOVAL

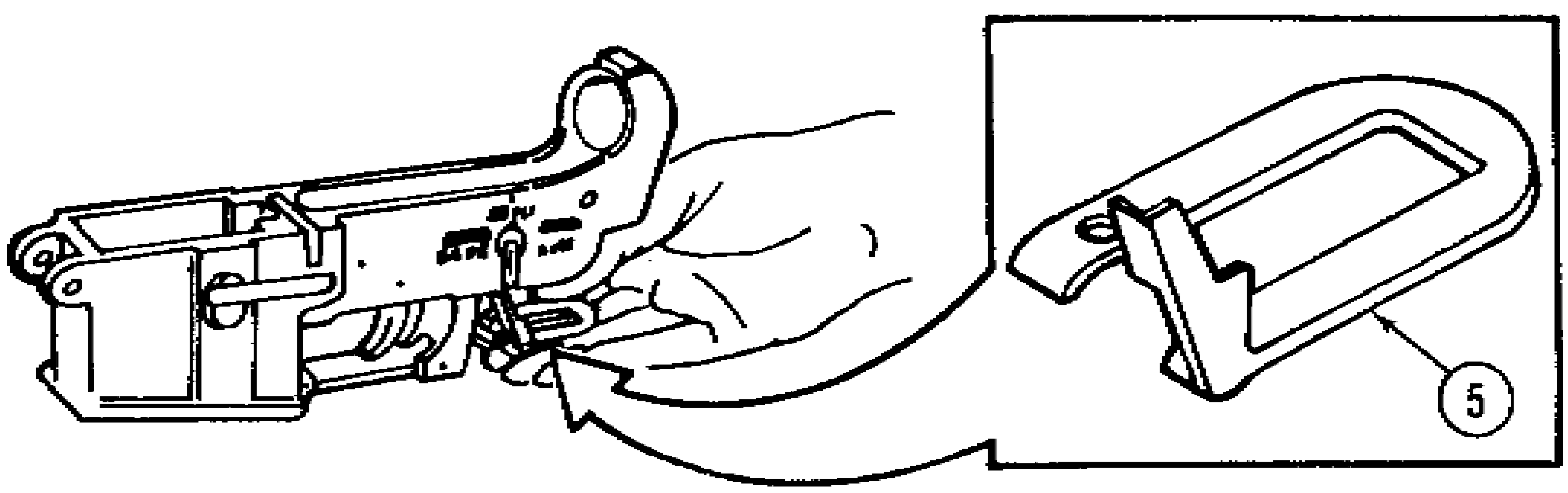
LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	a. Screw (1) and lock washer (2)	Using screwdriver, remove screw and lock washer.	



LOCATION	ITEM	ACTION	REMARKS
	b. Rifle grip (3) and helical spring (4)	Carefully remove rifle grip and hold helical spring in place.	



LOCATION	ITEM	ACTION	REMARKS
	c. Lock plate (5)	Remove.	

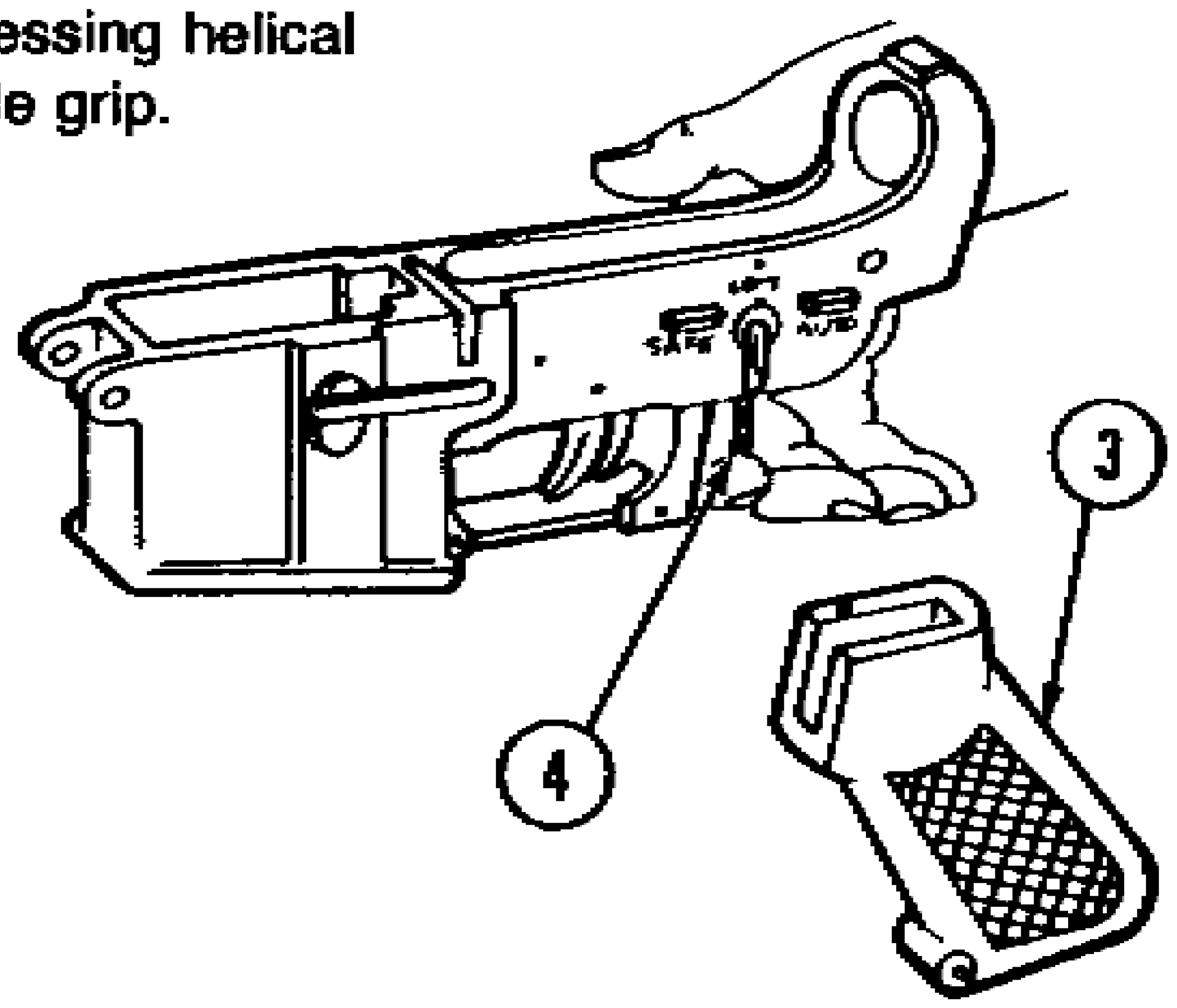


4-5. LOCK PLATE (CONT)

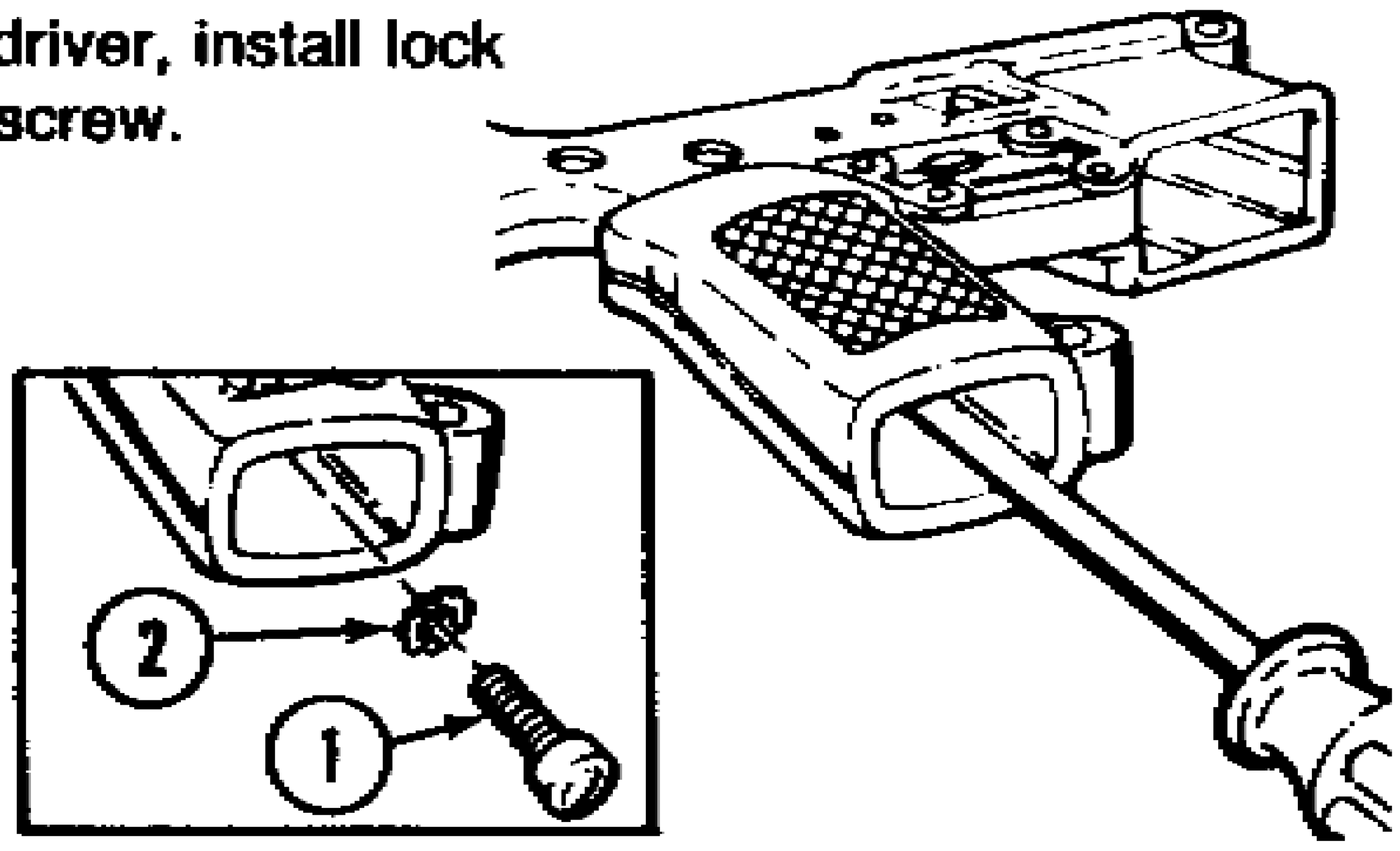
LOCATION	ITEM	ACTION	REMARKS

REMOVAL (CONT)

LOCATION	ITEM	ACTION	REMARKS
	d. Rifle grip (3)	Carefully compressing helical spring, install rifle grip.	



LOCATION	ITEM	ACTION	REMARKS
	e. Lock washer (2) and screw (1)	Using screwdriver, install lock washer and screw.	



INSPECTION

LOCATION	ITEM	ACTION	REMARKS
Lower Receiver and Extension Assembly	Lock plate	Tang is broken off. Replace.	

4-6. TOP SLING ADAPTER.

This task covers:

a. Installation
b. Removal
c. Inspection

INITIAL SETUP

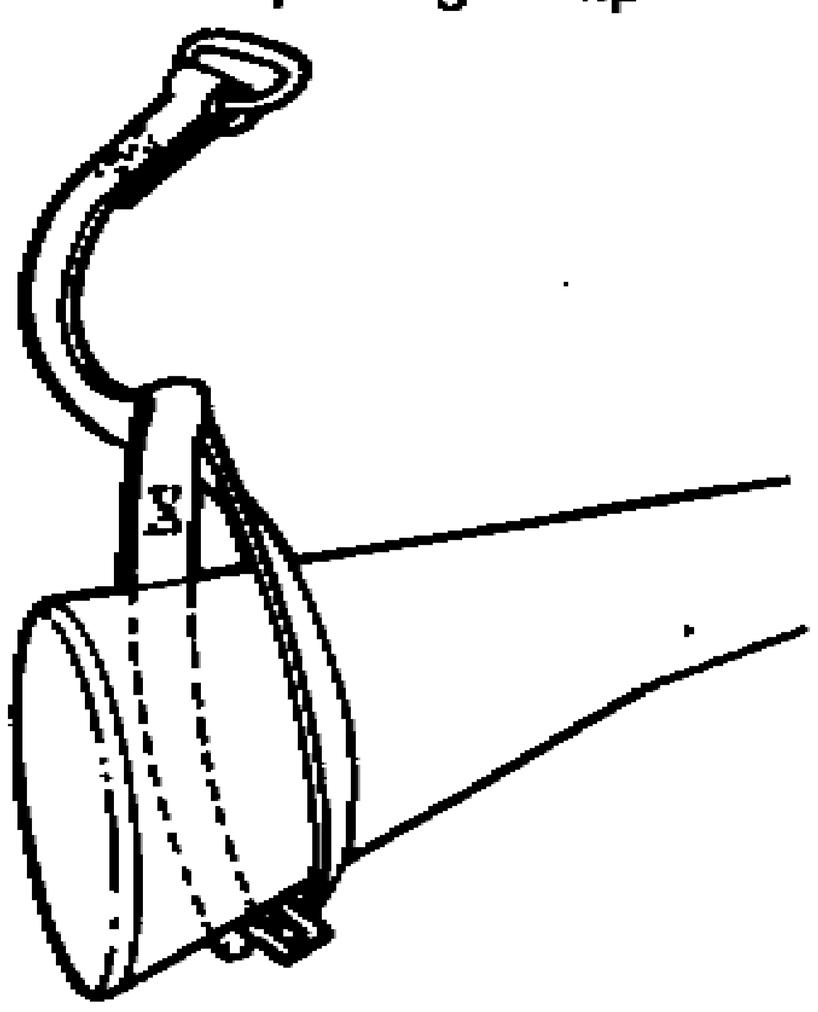
Materials/Parts
Top sling adapter kit 8448471

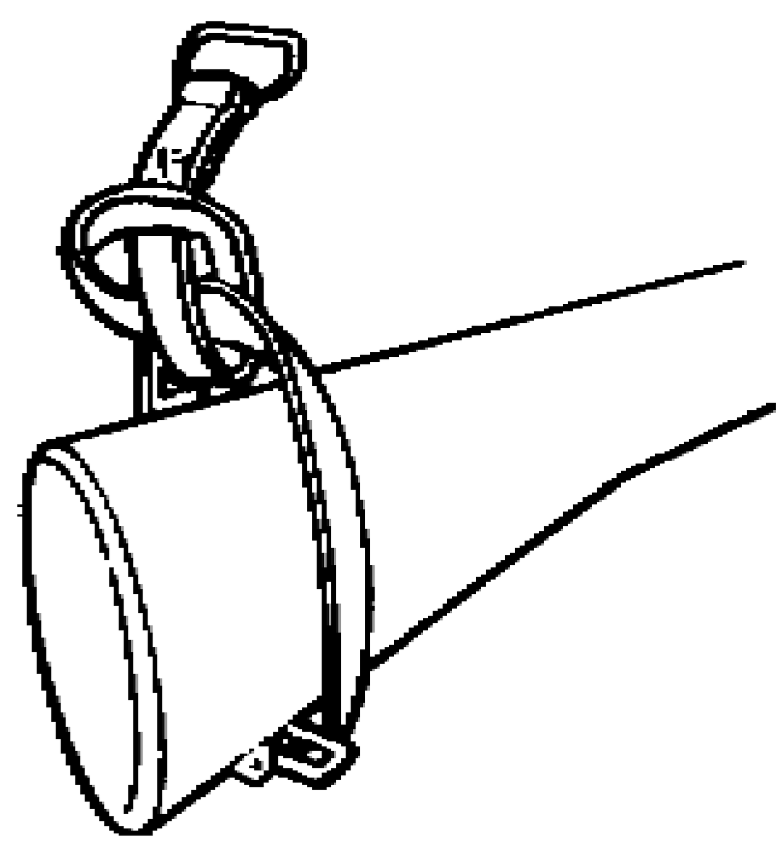
References
TM 9-1005-286-10

LOCATION	ITEM	ACTION	REMARKS

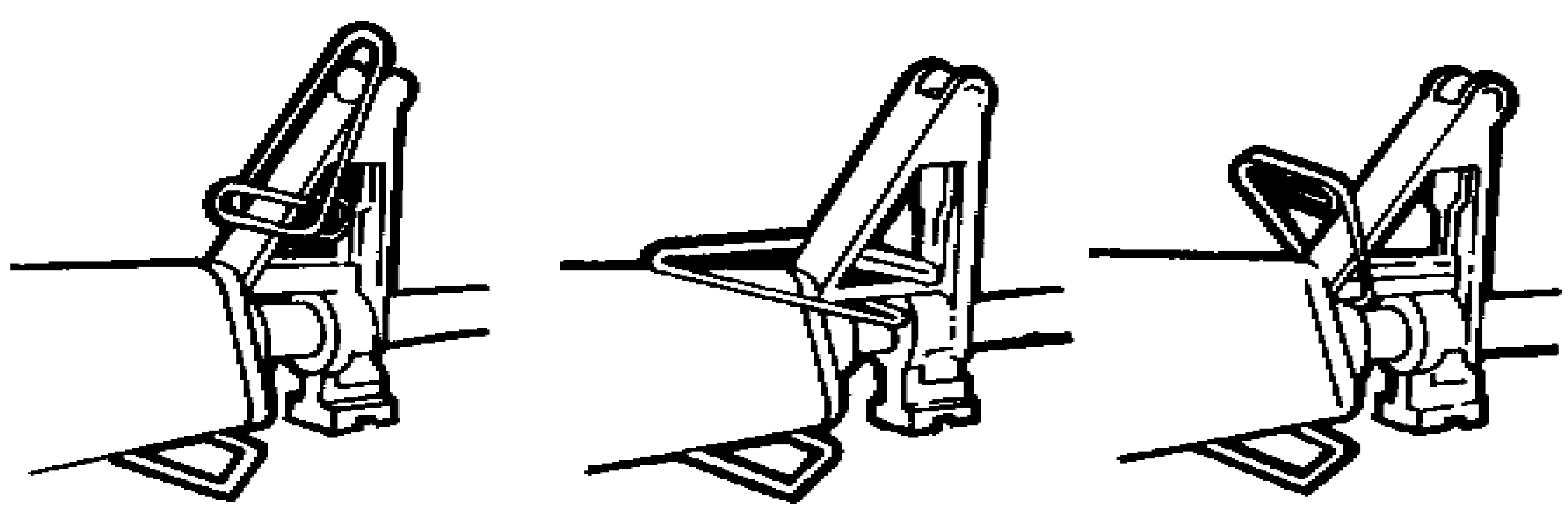
INSTALLATION

LOCATION	ITEM	ACTION	REMARKS
Rifle M16/M16A1	a. Rifle sling	Remove.	See TM 9-1005-286-10.
	b. Top sling strap	Install and tie.	





LOCATION	ITEM	ACTION	REMARKS
	c. Clamp	Install.	

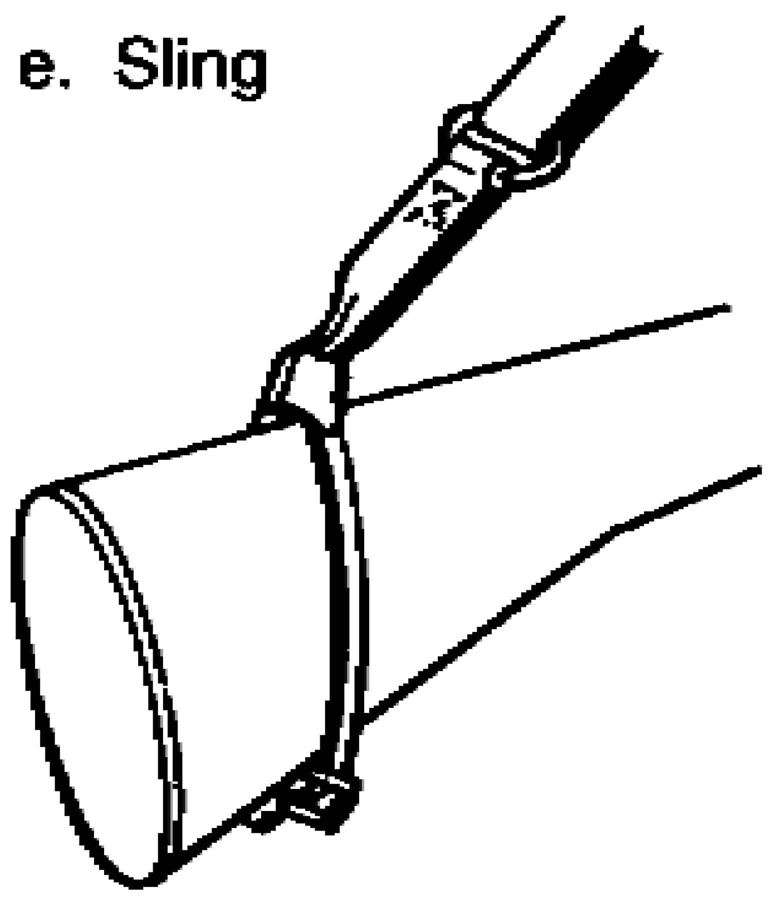


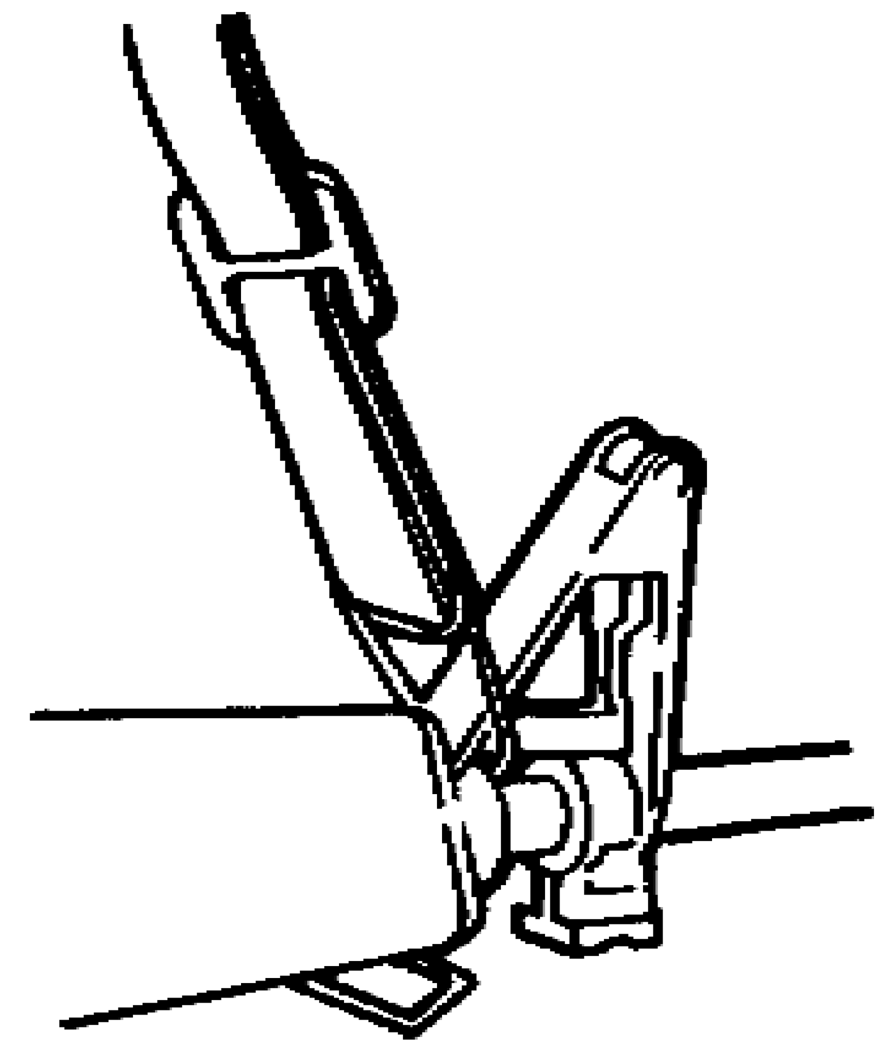
4-6. TOP SLING ADAPTER (CONT)

LOCATION	ITEM	ACTION	REMARKS

INSTALLATION (CONT)

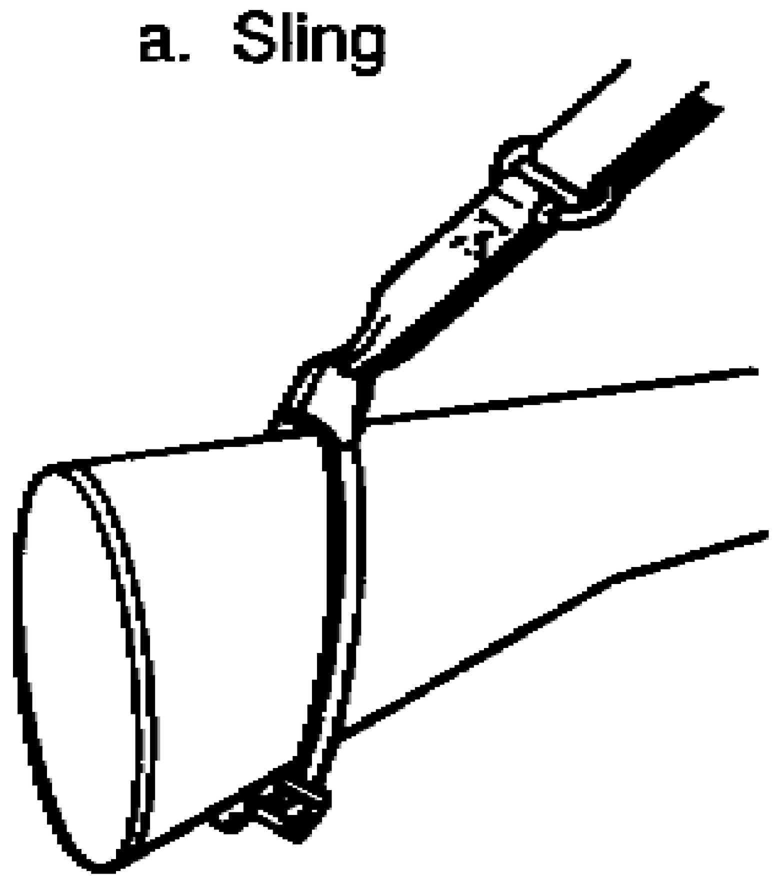
LOCATION	ITEM	ACTION
	d. Sling	Attach to adapter strap and front clamp.
	e. Sling	Adjust sling.

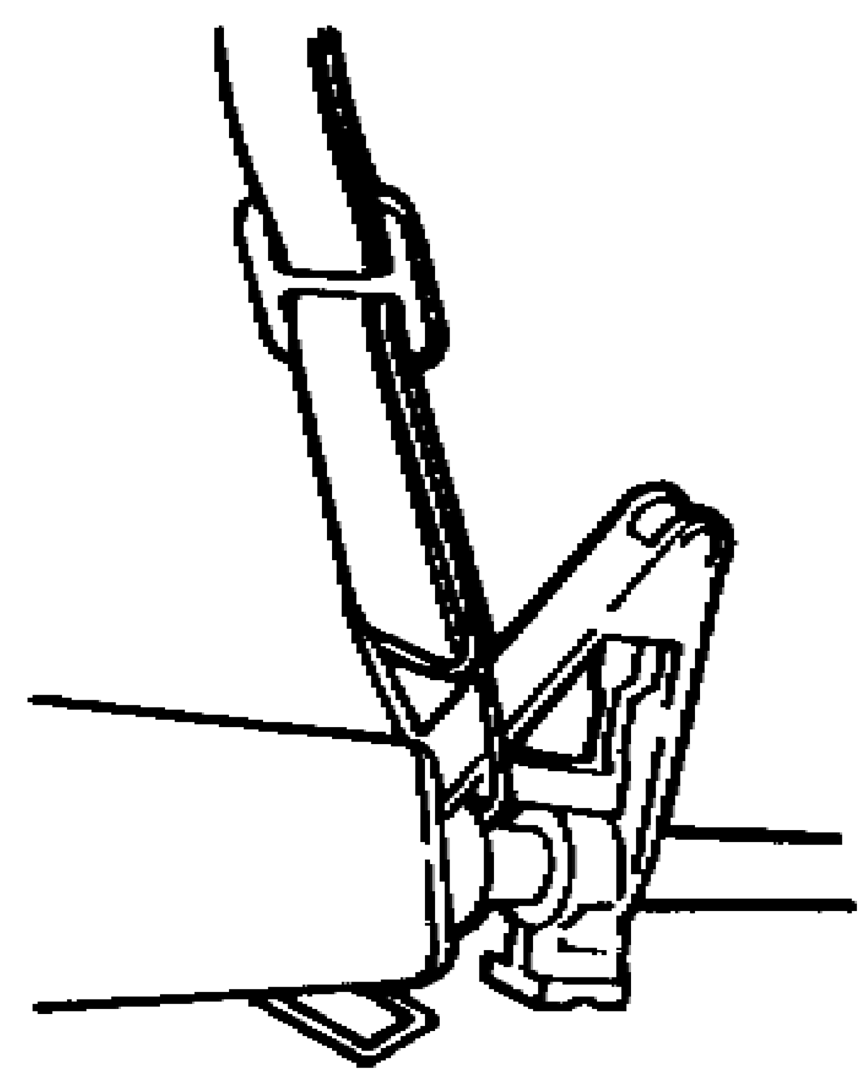




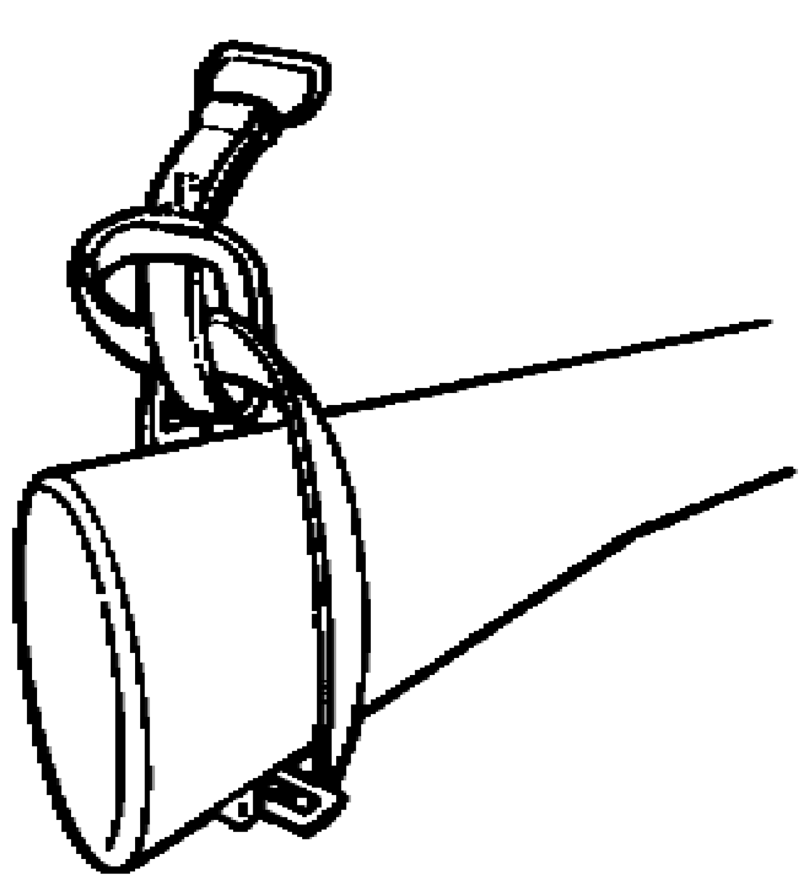
REMOVAL

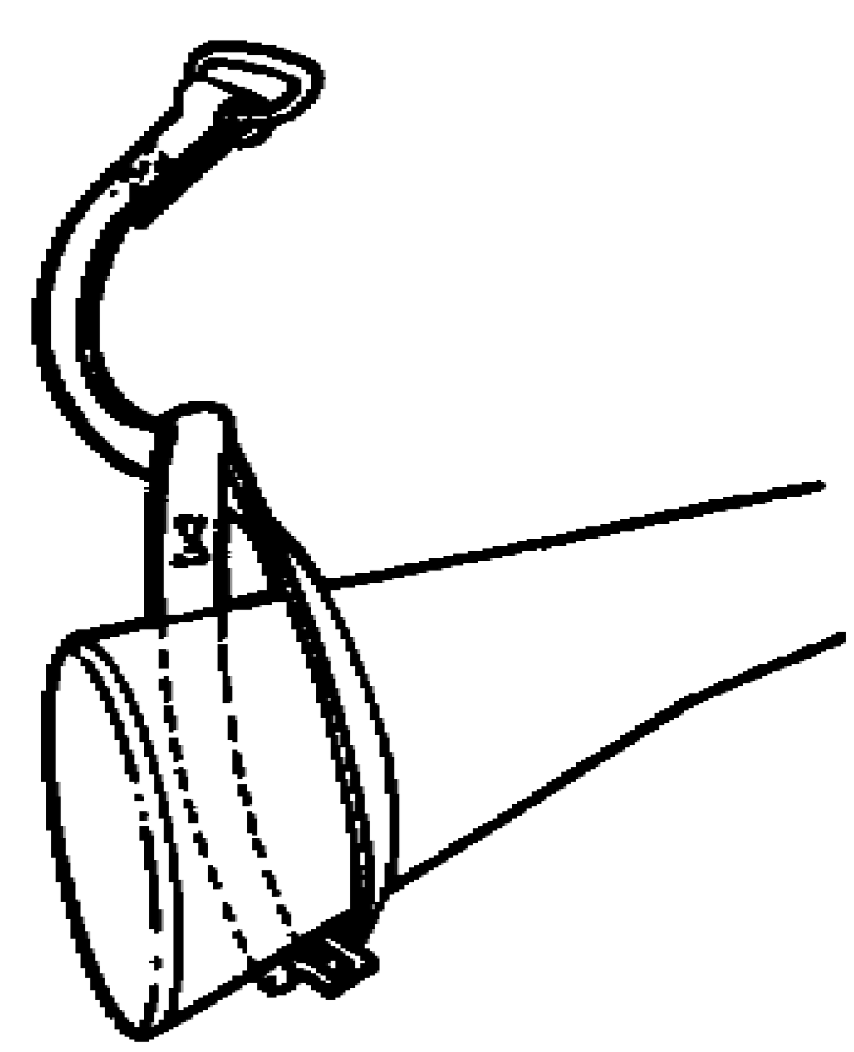
LOCATION	ITEM	ACTION
Rifle M16/M16A1	a. Sling	Remove.



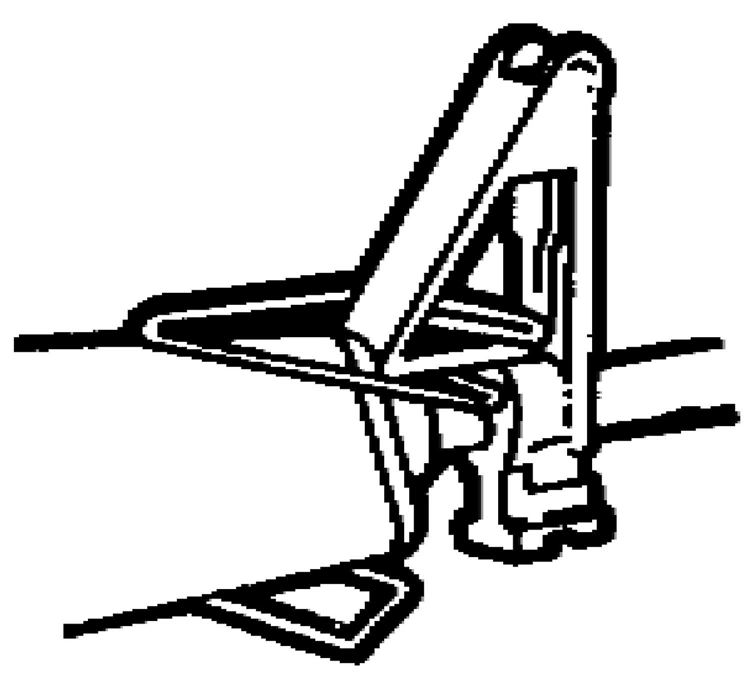


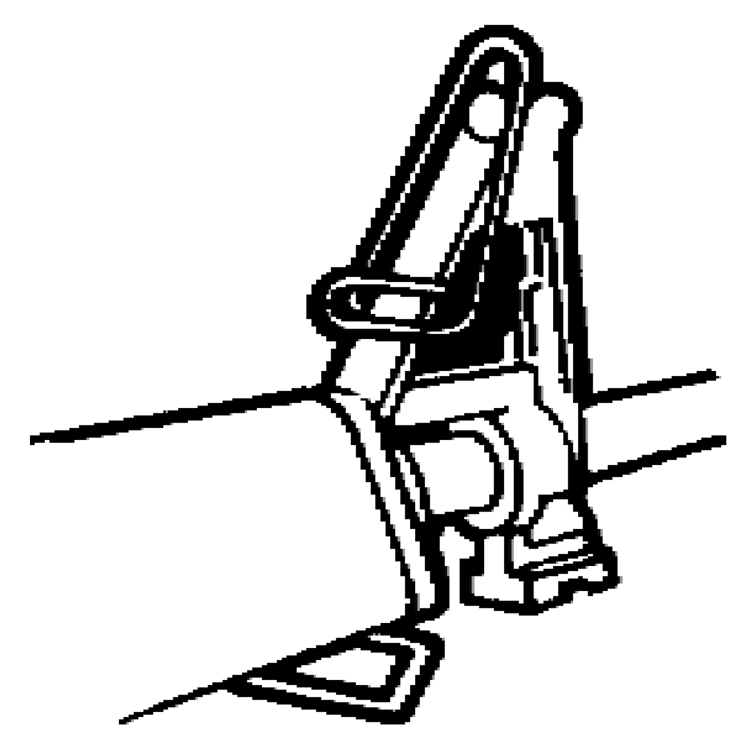
LOCATION	ITEM	ACTION
	b. Top sling strap	Untie and remove.





LOCATION	ITEM	ACTION	REMARKS
	c. Clamp	Remove.	





LOCATION	ITEM	ACTION	REMARKS
	d. Sling	Install to rifle.	See TM 9-1005-286-10.
INSPECTION			
Rifle M16/M16A1	Top sling adapter	Replace if badly worn or damaged.	

4-7. RIFLE BIPOD M3.

This task covers:

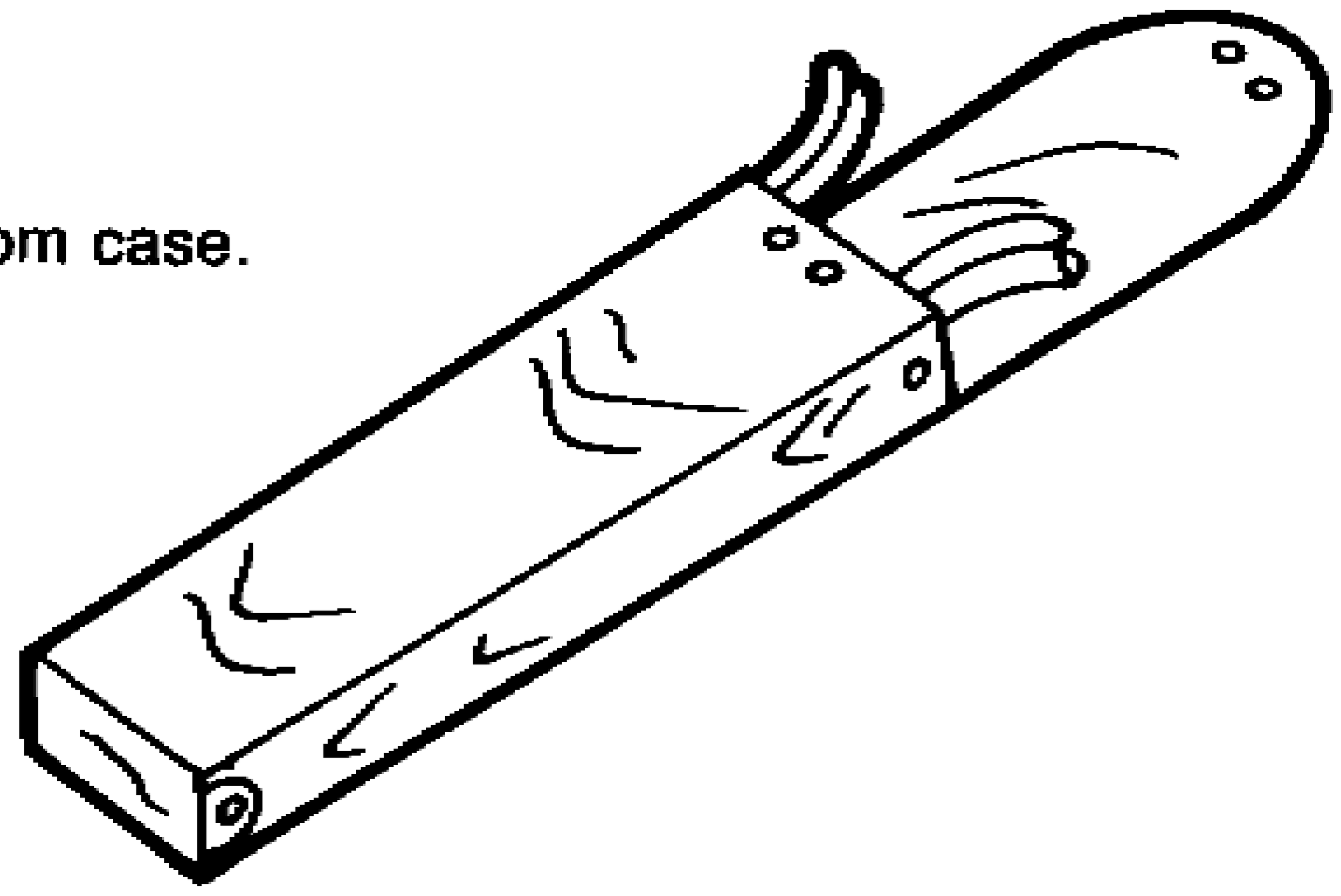
a. Installation
b. Removal
c. Inspection

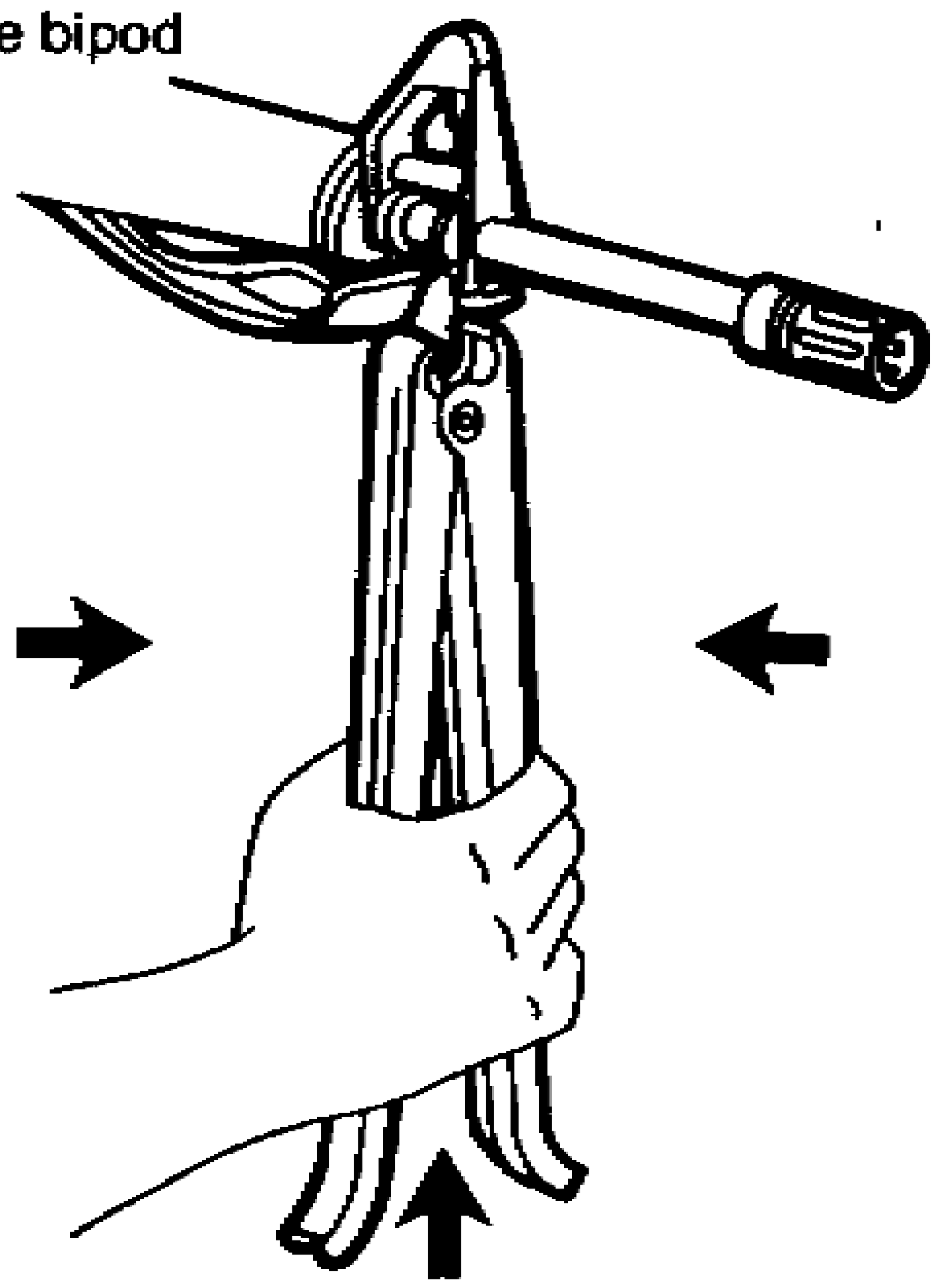
INITIAL SETUP

Materials/Parts

Carrying case NSN 1005-00-992-6676
Rifle Bipod M3 NSN 1005-00-999-2430
Cleaner, lubricant and preservative (CLP) (item 5, app D)

LOCATION	ITEM	ACTION	REMARKS
INSTALLATION			
1 Carrying Case	Rifle Bipod M3	Remove from case.	
2 Rifle Bipod M3	All Parts	Clean and lubricate with CLP (item 5, app E).	
3 Rifle M16/M16A1	Rifle Bipod M3	Squeeze bipod legs together, snap on rifle, and release bipod legs.	

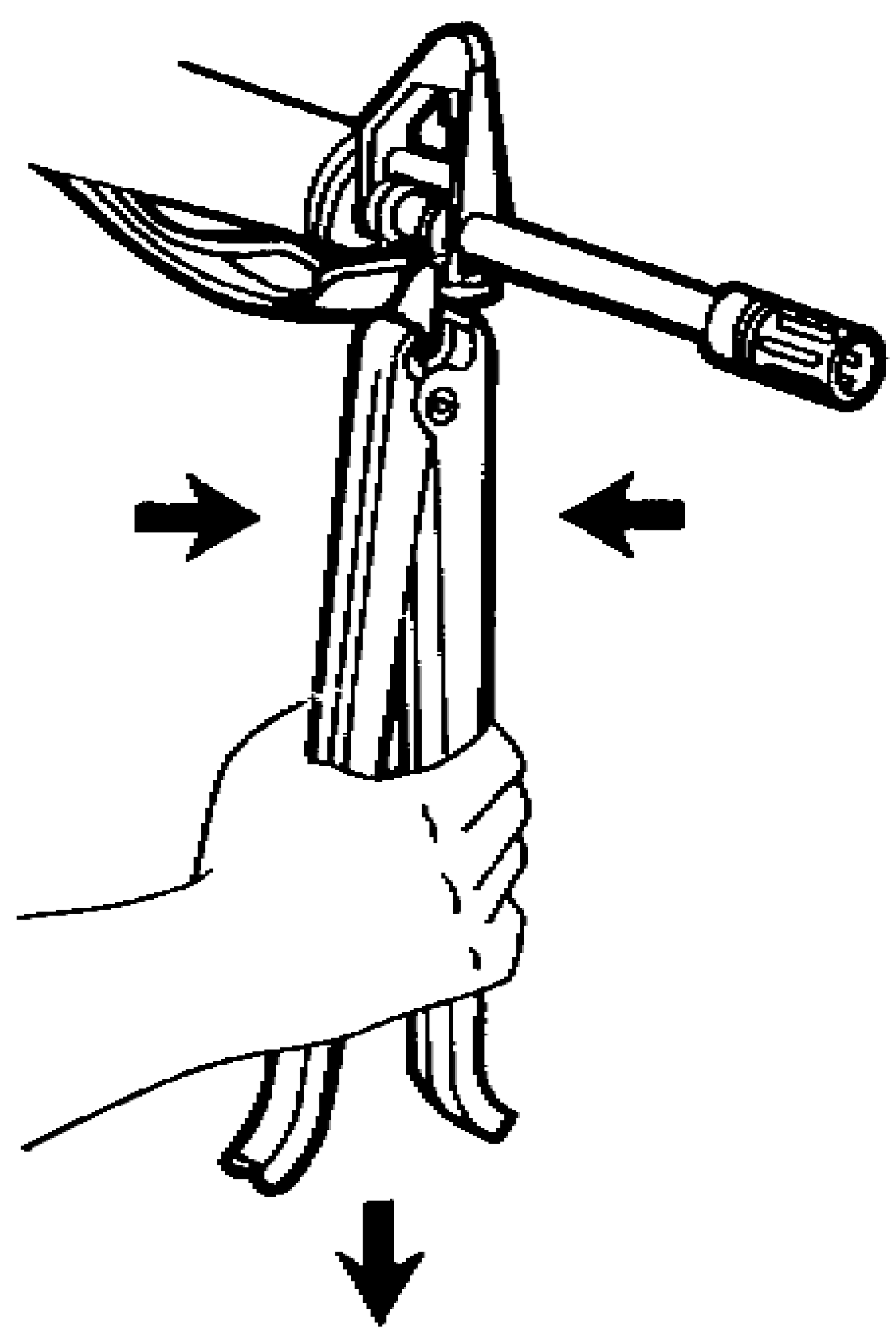




LOCATION	ITEM	ACTION	REMARKS

REMOVAL

Rifle M16/M16A1	Rifle Bipod M3	a. Squeeze bipod legs together and remove from rifle. b. Clean and lubricate with CLP (item 5, app E). c. Install in case.	



INSPECTION

Rifle M16/M16A1	Rifle Bipod M3	Inspect.	Badly worn cases should be replaced. Damaged broken or bent bipods should be replaced. Bipod must have a good finish.

4-8. BLANK FIRING ATTACHMENT M15A2.

This task covers:

a. Installation
b. Removal
c. Cleaning
d. Inspection
e. Repainting
f. Replacement

INITIAL SETUP

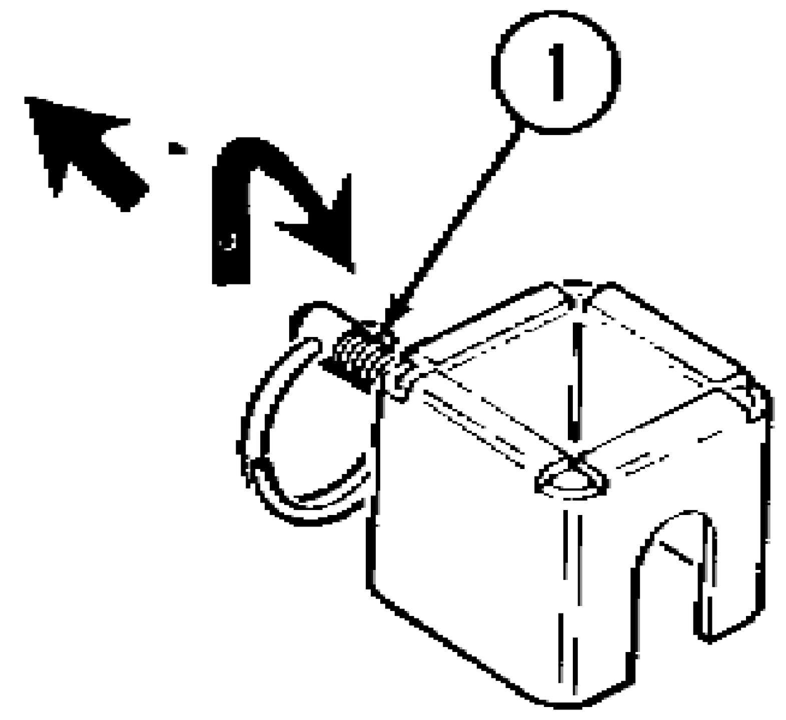
Materials/Parts
Cleaner, lubricant and preservative (CLP) (item 5, app D)

General Safety Instructions
Do not keep live ammunition near the work area. Only blank cartridge M200 is to be used when the blank firing attachment is attached to the rifle.

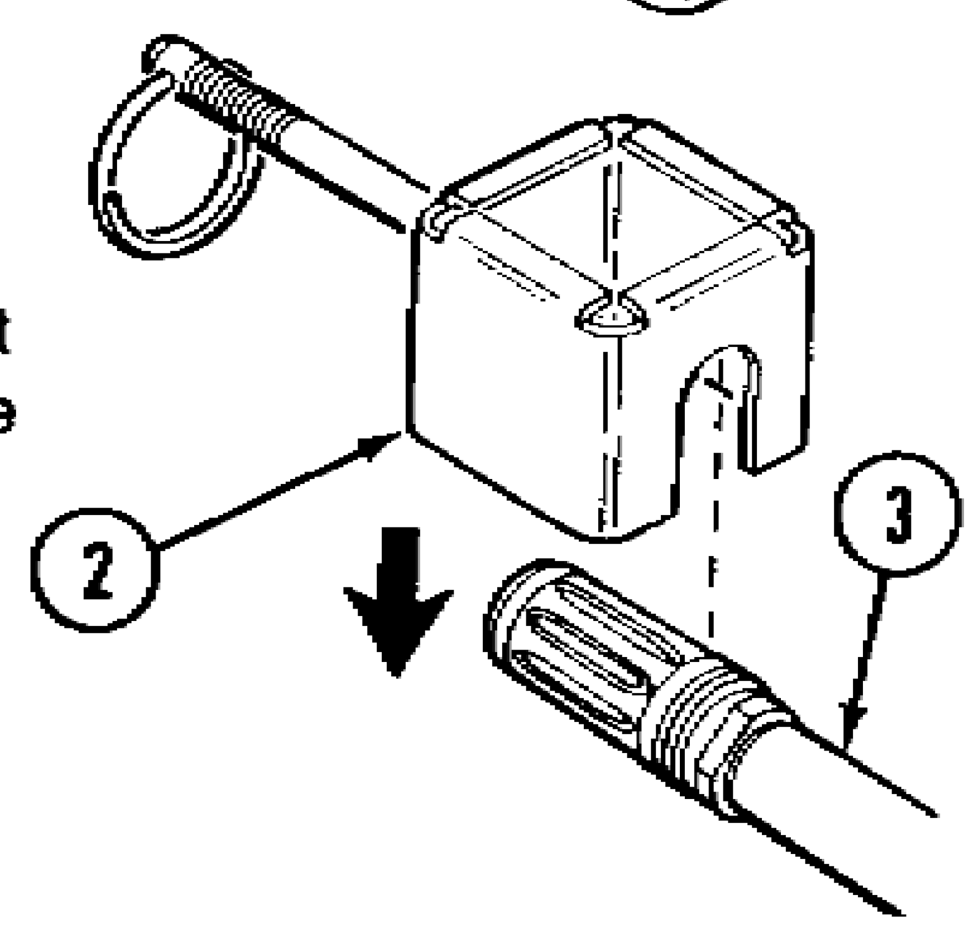
LOCATION	ITEM	ACTION	REMARKS

INSTALLATION

LOCATION	ITEM	ACTION	REMARKS
Blank Firing Attachment M15A2	a. Slide (1)	Unscrew and pull slide all the way out.	



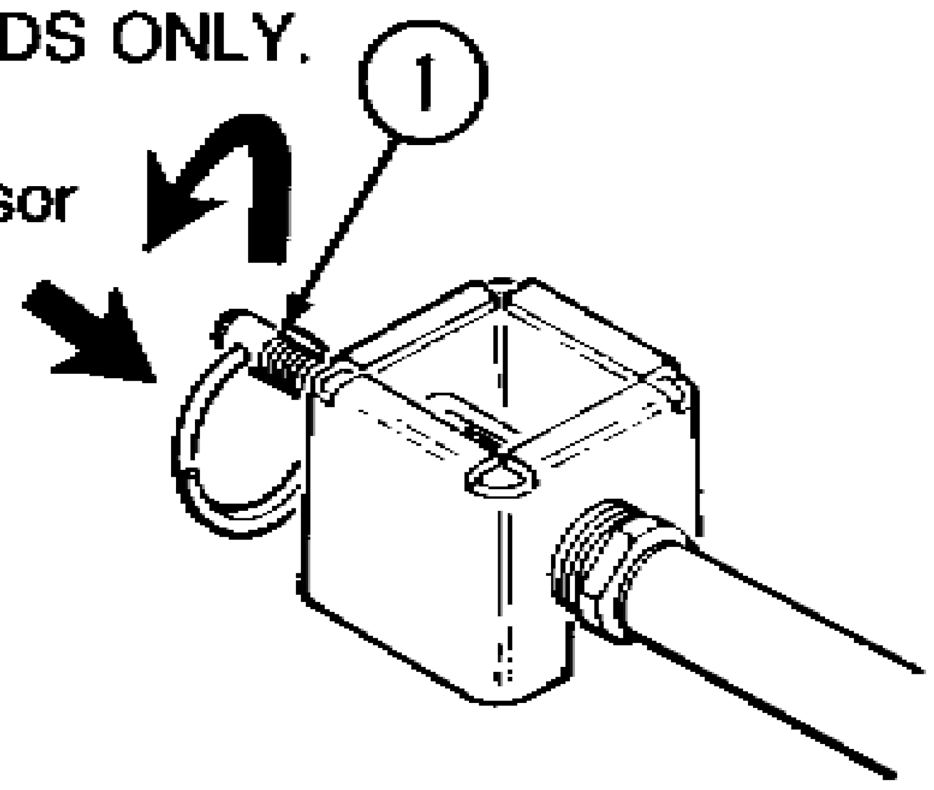
LOCATION	ITEM	ACTION	REMARKS
	b. Blank firing attachment (2) and flash suppressor (3)	Hook blank firing attachment behind the first groove of the flash suppressor.	



CAUTION

Do not use tools to tighten the blank firing attachment, HANDS ONLY.

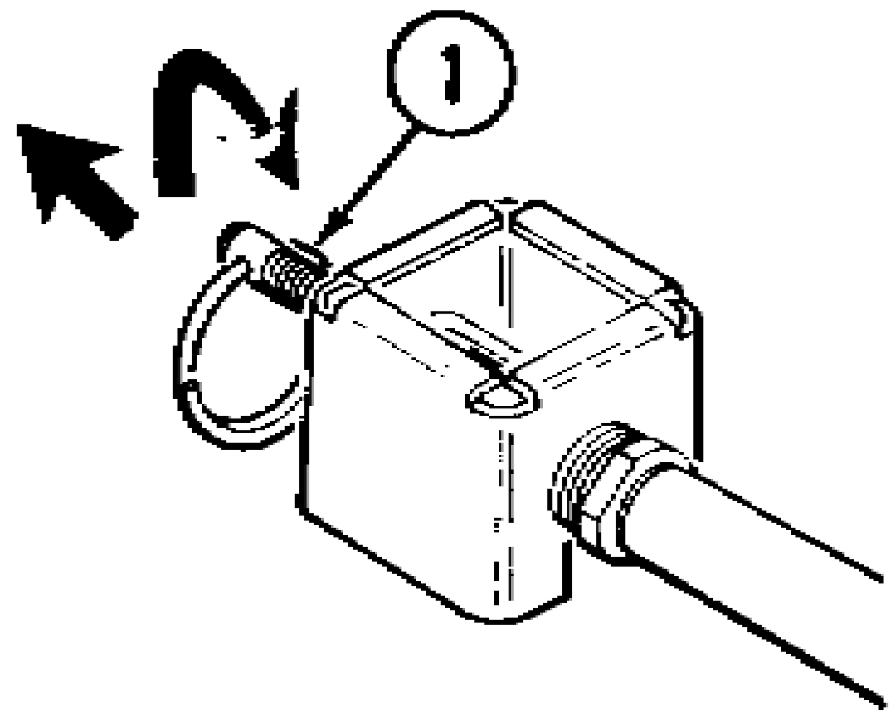
LOCATION	ITEM	ACTION	REMARKS
	c. Slide (1)	Push slide into flash suppressor and hand tighten.	

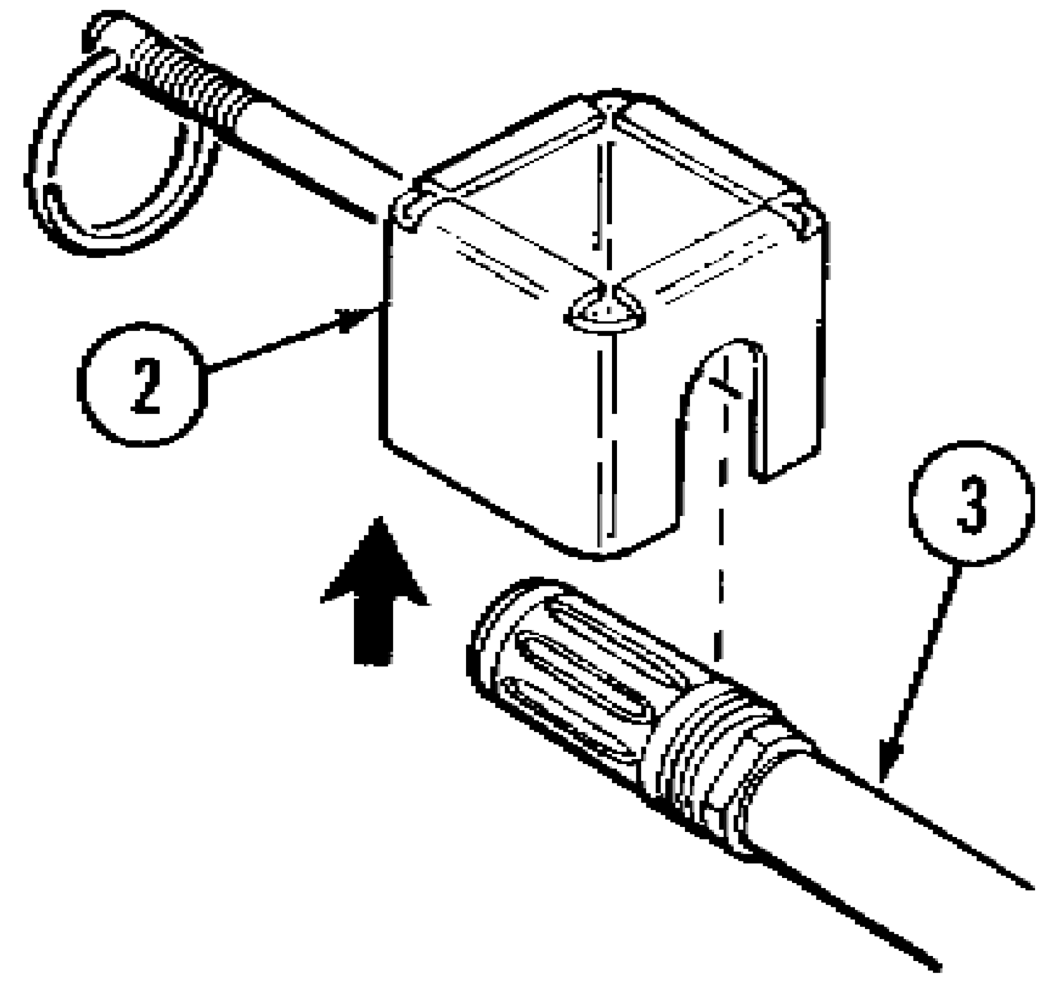


NOTE

Check and retighten after firing approximately 50 rounds.

LOCATION	ITEM	ACTION	REMARKS
REMOVAL			
Blank Firing Attachment M15A2	a. Slide (1)	Unscrew and pull slide all the way out.	
	b. Blank firing attachment (2) and flash suppressor (3)	Lift up off of flash suppressor.	





LOCATION	ITEM	ACTION	REMARKS
CLEANING			
Blank Firing Attachment M15A2		Clean with CLP (item 5, app D), wipe dry, and coat with CLP.	
INSPECTION			
Blank Firing Attachment M15A2	Inspect for cracks or distortion. Be sure the parts in the slide are clear and clean.		If blank firing attachment is cracked or distorted, it is unserviceable.
REPAINTING			
Blank Firing Attachment M15A2		Repaint blank firing attachment using fluorescent coating compound, (item 7, app D).	Painting is the only repair authorized.
REPLACEMENT			
Blank Firing Attachment M15A2	Replace if unserviceable.		

Section II. DIRECT SUPPORT AND GENERAL SUPPORT AUXILIARY EQUIPMENT

4-9. GENERAL.

a. The following materiel is used in conjunction with the M16/M16A1 rifle:

(1) Bayonet-Knife M7
(2) Bayonet-Knife Scabbard M8A1 or M10
(3) Low light level sights

b. Refer to TM 9-1010-221-24P P for direct support and general support maintenance for the Grenade Launcher M203.

c. Refer to TM 9-1005-237-15P for repair parts on Bayonet-Knife M7 and Bayonet-Knife Scabbard M8A1 or M10.

4-10. BAYONET-KNIFE M7.

This task covers:
a. Disassembly
b. Inspection/Repair
c. Reassembly

INITIAL SETUP

Tools
Small Arms Repairman Tool Kit
SC 5180-95-CI-A07 (19204)
Field Maintenance Basic Less Power
Small Arms Shop Set SC 4933-95-CL-A11 (19204)

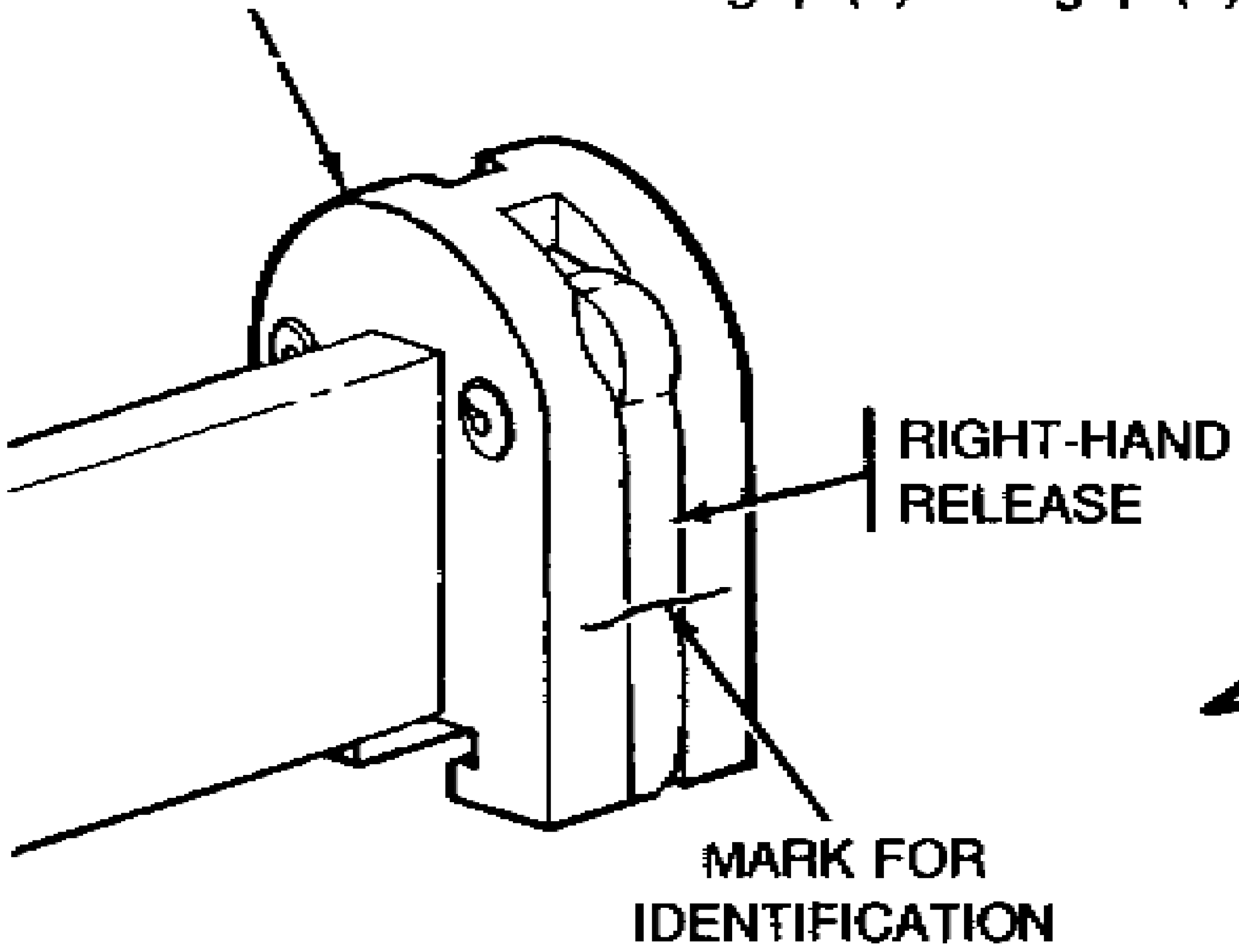
Equipment Condition
Assembled

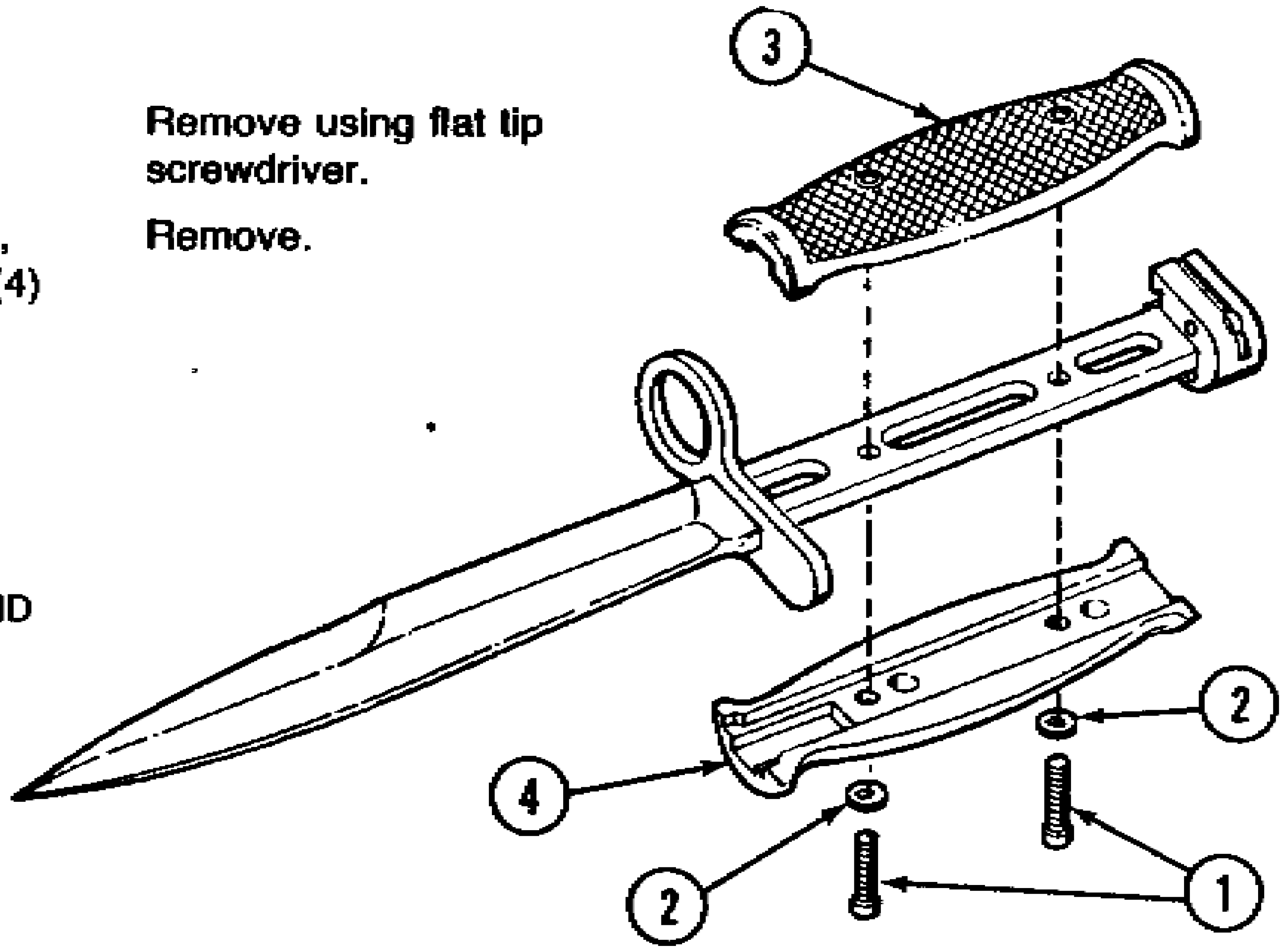
References
TM 9-1005-237-15P

General Safety Instructions
Keep tip of blade pointed away from body at all times.

To avoid injury to your eye, use care when removing and installing spring-loaded parts.

LOCATION	ITEM	ACTION	REMARKS
DISASSEMBLY			
Bayonet-Knife M7	a. Grip screws (1)	Remove using flat tip screwdriver.	
	b. Lock washers (2), grip (3) and grip (4)	Remove.	



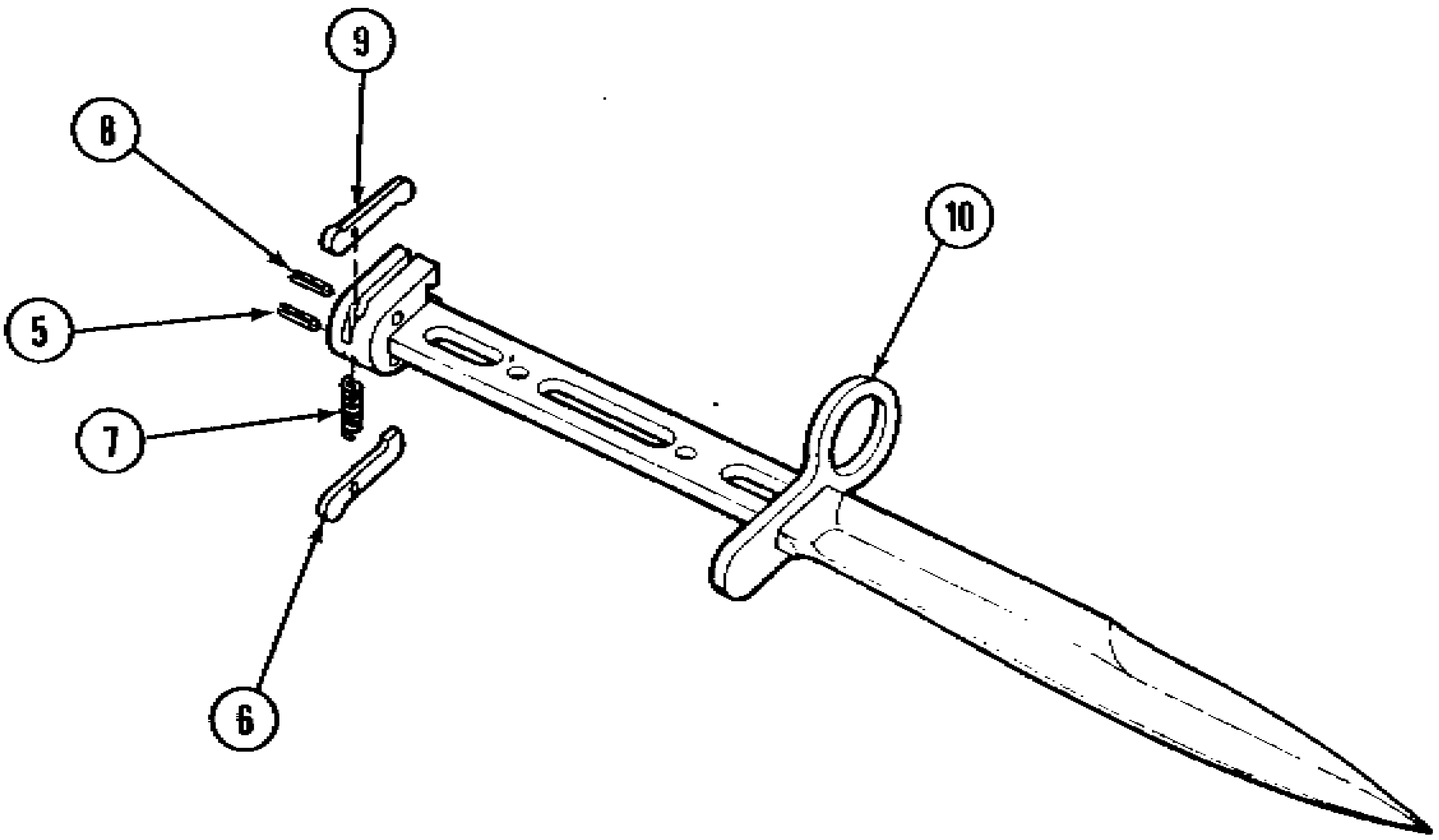


LOCATION	ITEM	ACTION	REMARKS

NOTE

Prior to disassembly, it is recommended that the right-hand release and plate be marked (using machinist's scriber) to assist in identification when assembling the left- and right-hand releases.

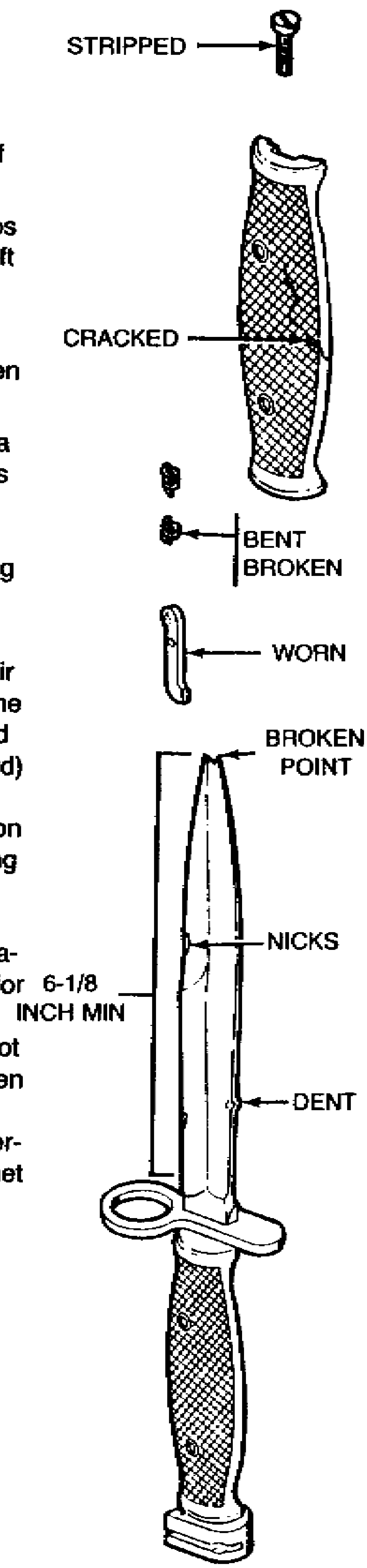
	c. Spring pin (5)	Remove using drive pin punch and hand hammer.	
	d. Release (6) and spring (7)	Remove.	
	e. Spring pin (8)	Remove using drive punch and hand hammer.	
	f. Release (9)	Remove.	Spring tension will be present if release (6) was not removed.
	g. Blade assembly (10)		



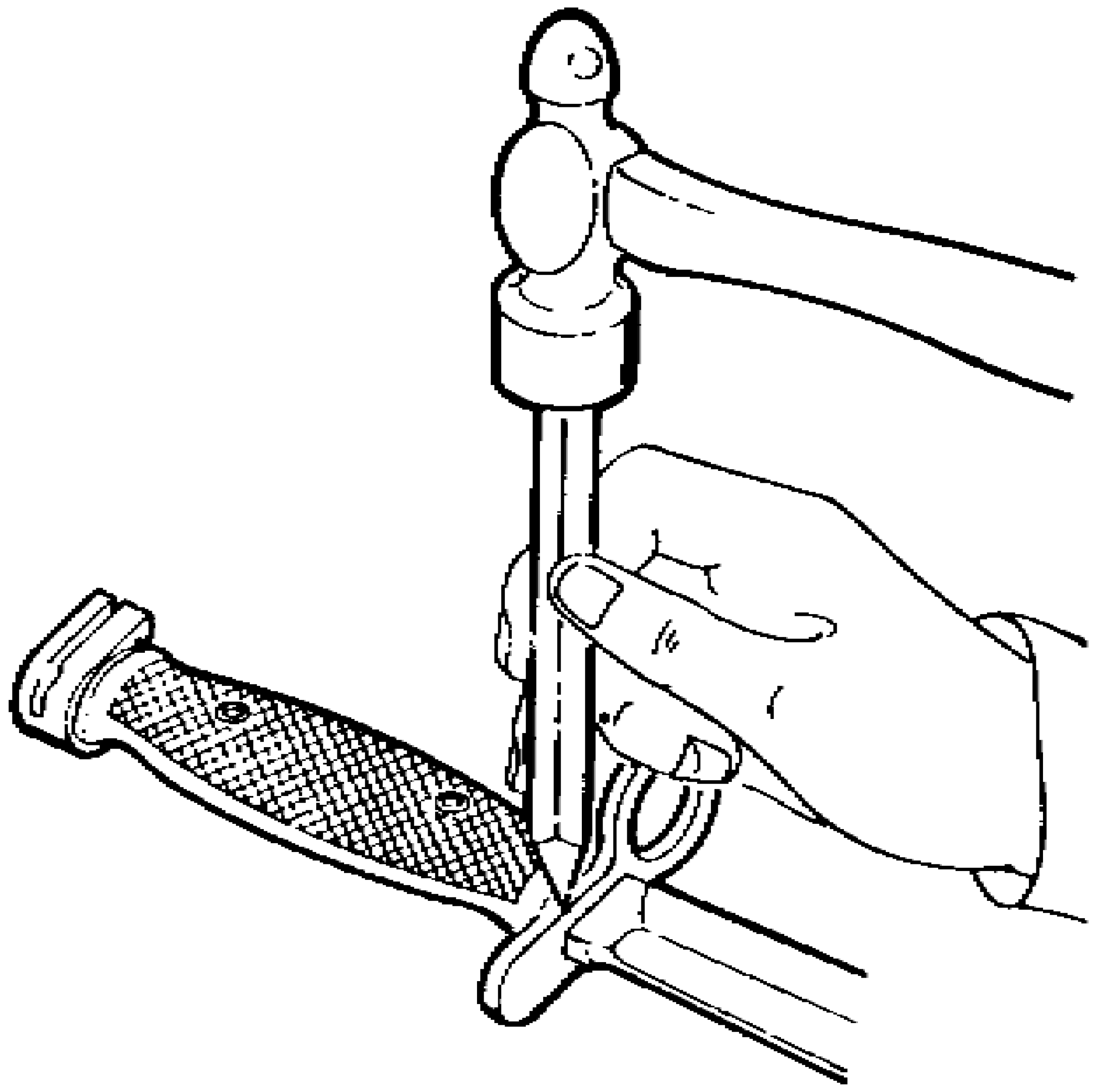
4-10. BAYONET-KNIFE M7 (CONT).

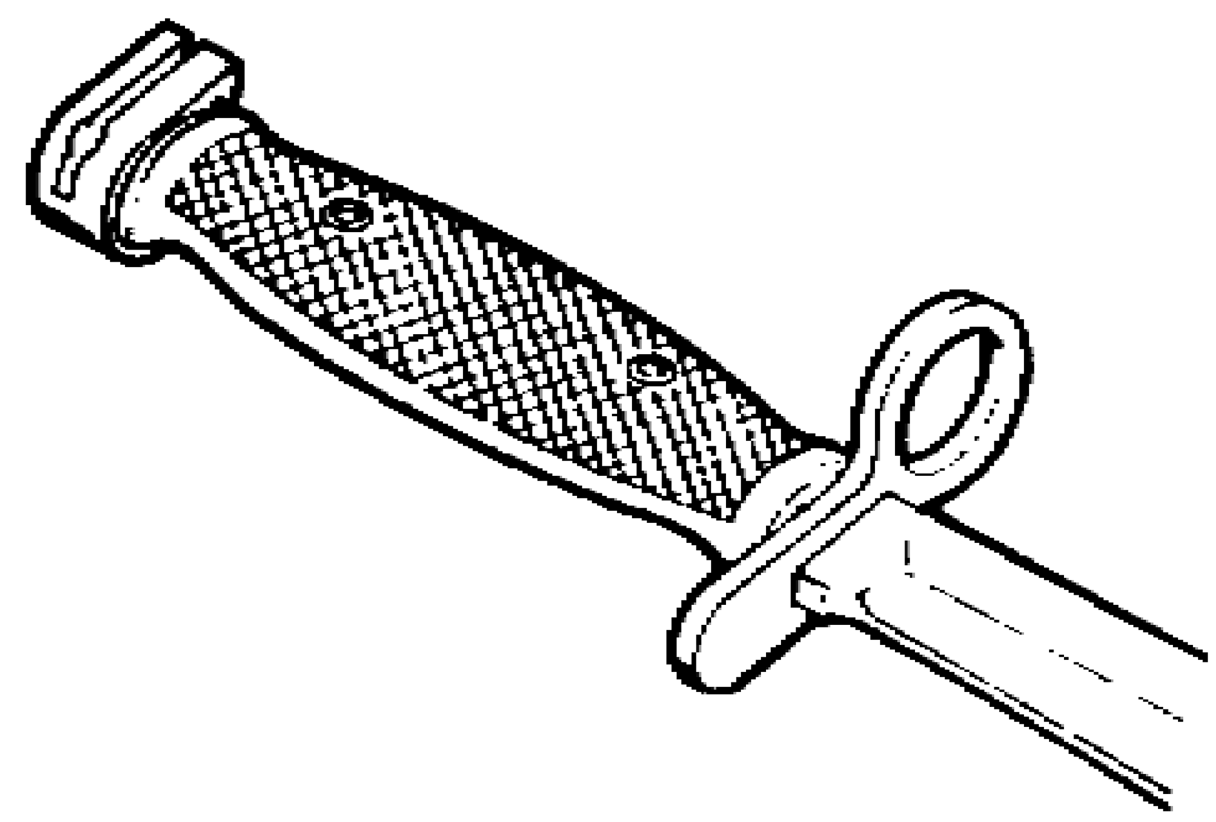
INSPECTION/REPAIR

LOCATION	ITEM	ACTION	REMARKS
Bayonet-Knife M7	a. Screws	Inspect threads and replace if stripped or damaged.	
	b. Grips	Inspect for cracks in both grips and stripped threads in the left grip. Replace if defective.	
	c. Spring pins	Replace if worn or damaged.	
	d. Spring	Inspect for kinked, set, or broken springs. Replace if defective.	
	e. Release	Inspect release camming area for wear if positive retention is questionable. Replace the release. Inspect release for bends. Repair by straightening or replacing, as required.	
	f. Blade assembly	Inspect blade assembly for nicks, breaks, or dents. Repair by grinding and/or stoning. The length of the blade (measured from the front face of the guard) must not be less than 6 1/8 inches after repointing. Nicks on the cutting edge not exceeding 3/16 inch in depth may be removed by grinding. Ground areas shall be blended into adjacent surfaces. Inspect plates for looseness. Stake or peen to tighten. If unable to tighten, spot or arc weld. Make certain when repairing that sufficient clearance exists after repairs to permit positive retention of bayonet to the rifle.	



LOCATION	ITEM	ACTION	REMARKS
		Inspect for loose guard. Repair by swaging the link using drive pin punch and hammer.	



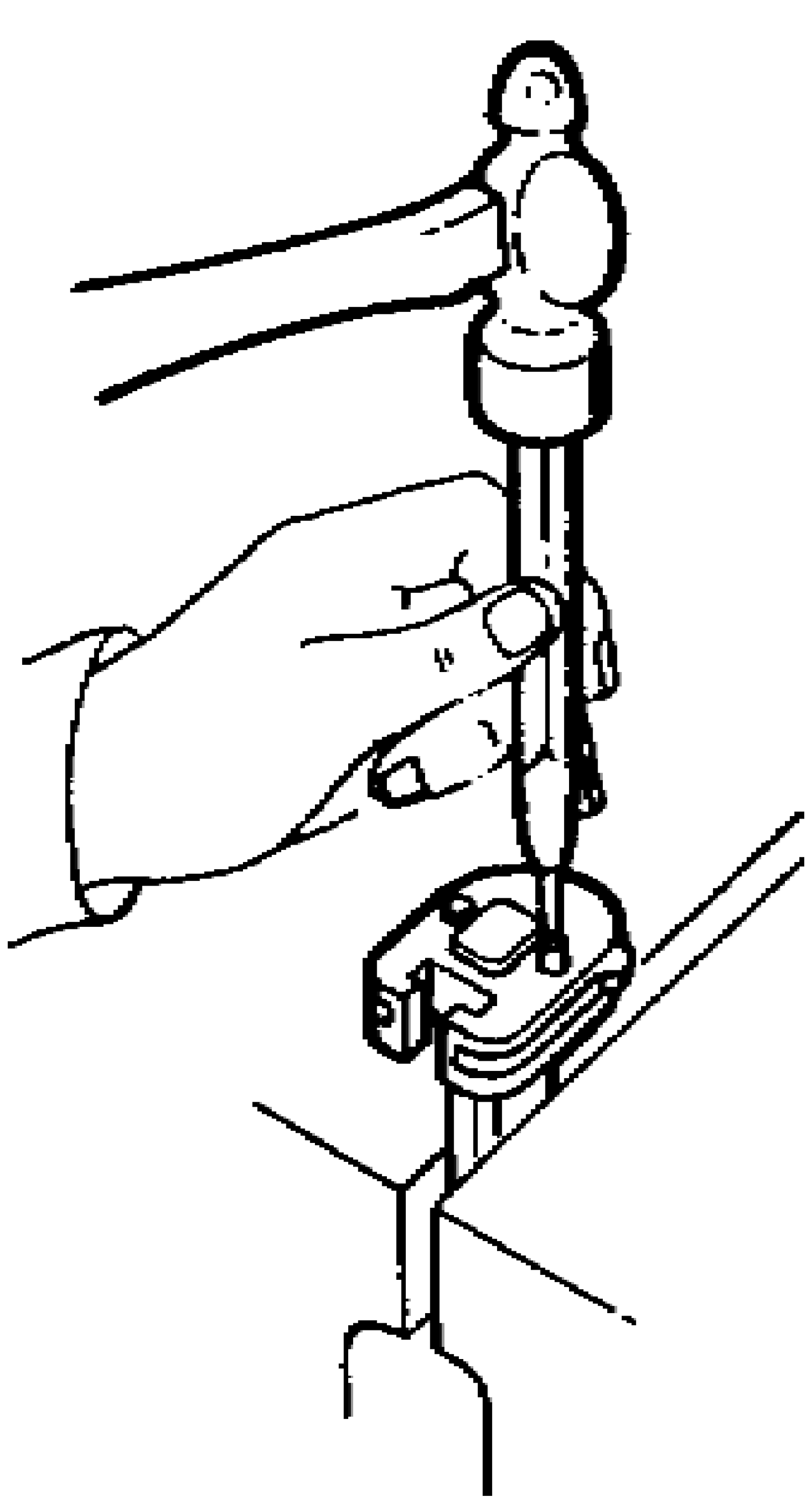


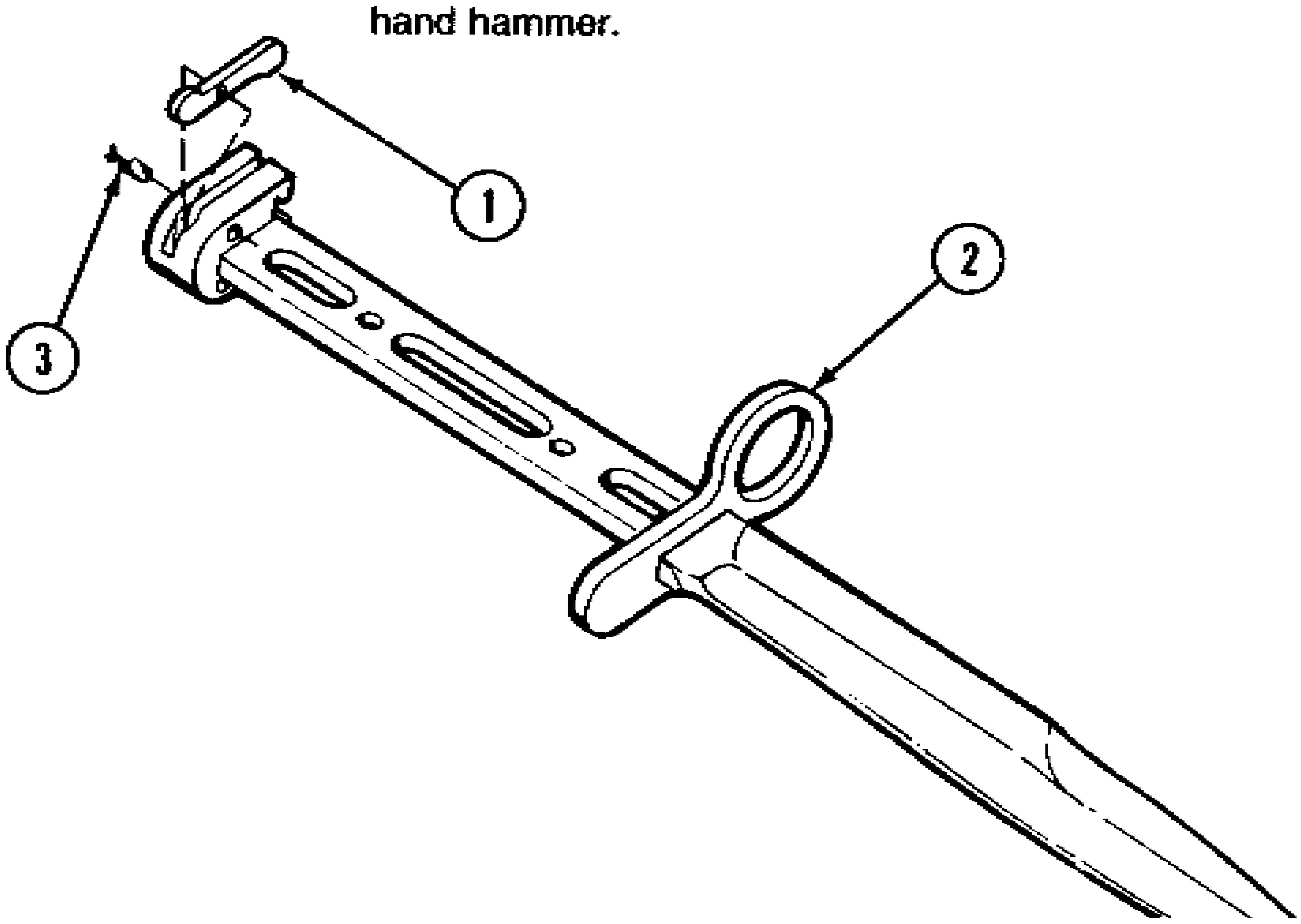
NOTE

Refer to TM 9-1005-237-15P for repair parts for the Bayonet-Knife M7 and Bayonet-Knife Scabbard M8A1 or M10.

REASSEMBLY

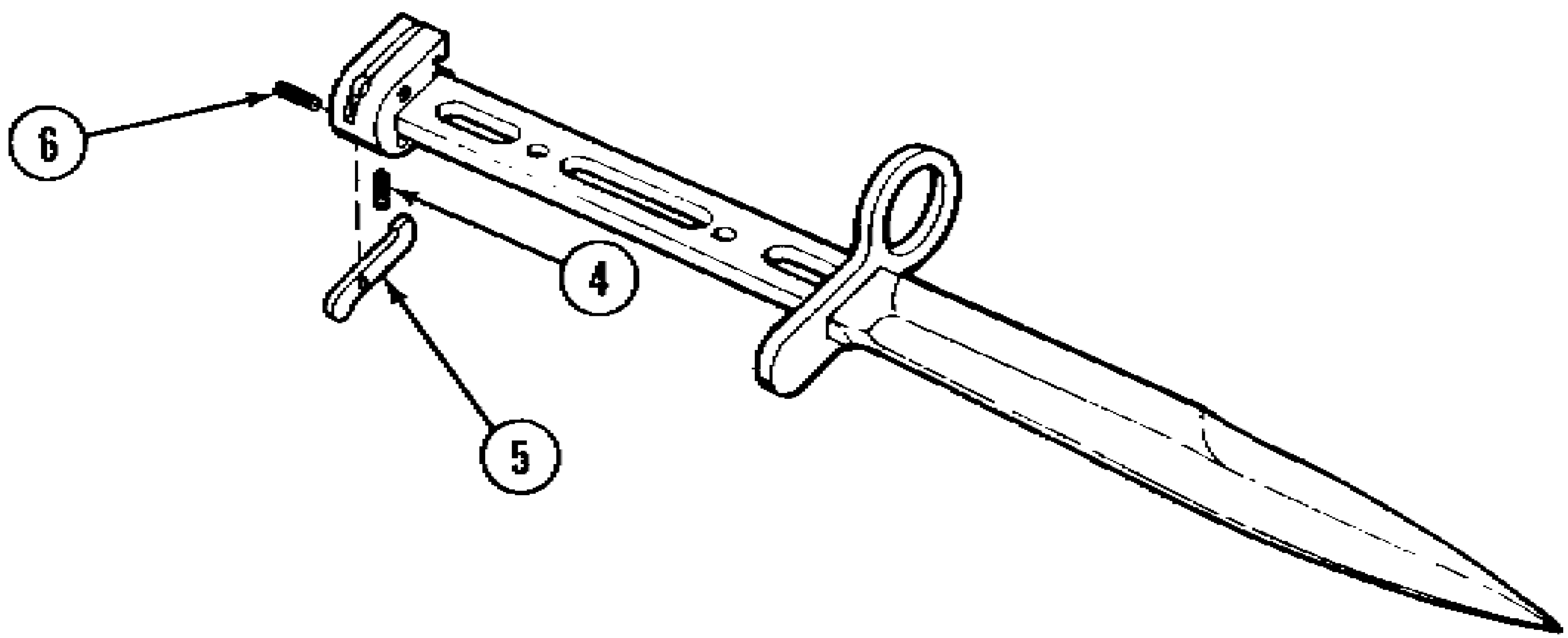
LOCATION	ITEM	ACTION	REMARKS
Bayonet-Knife M7	a. Release (1) and blade assembly (2)	Install.	
	b. Spring pin (3)	Install using drive pin punch and hand hammer.	



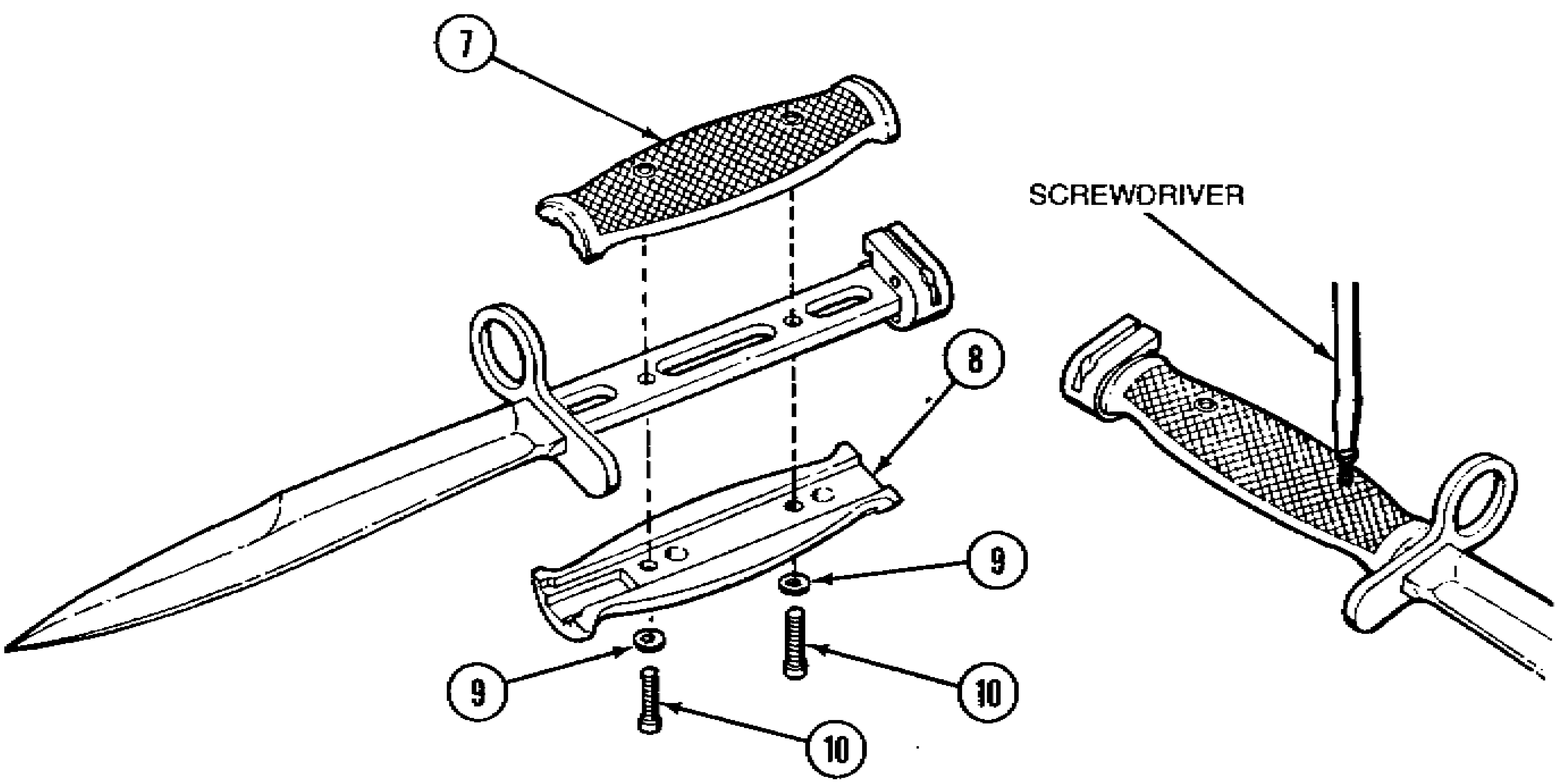


4-10. BAYONET-KNIFE M7 (CONT).

LOCATION	ITEM	ACTION	REMARKS
REASSEMBLY (CONT)			
	c. Spring (4) and release (5)	Install.	
	d. Spring pin (6)	Install using drive pin punch and hand hammer.	



LOCATION	ITEM	ACTION	REMARKS
	e. Grip (7), grip (8) and lock washers (9)	Install.	
	f. Screw (10)	Install using flat tip screwdriver.	



4-11. BAYONET-KNIFE SCABBARD M8A1 OR M10.

This task covers inspection/repair.

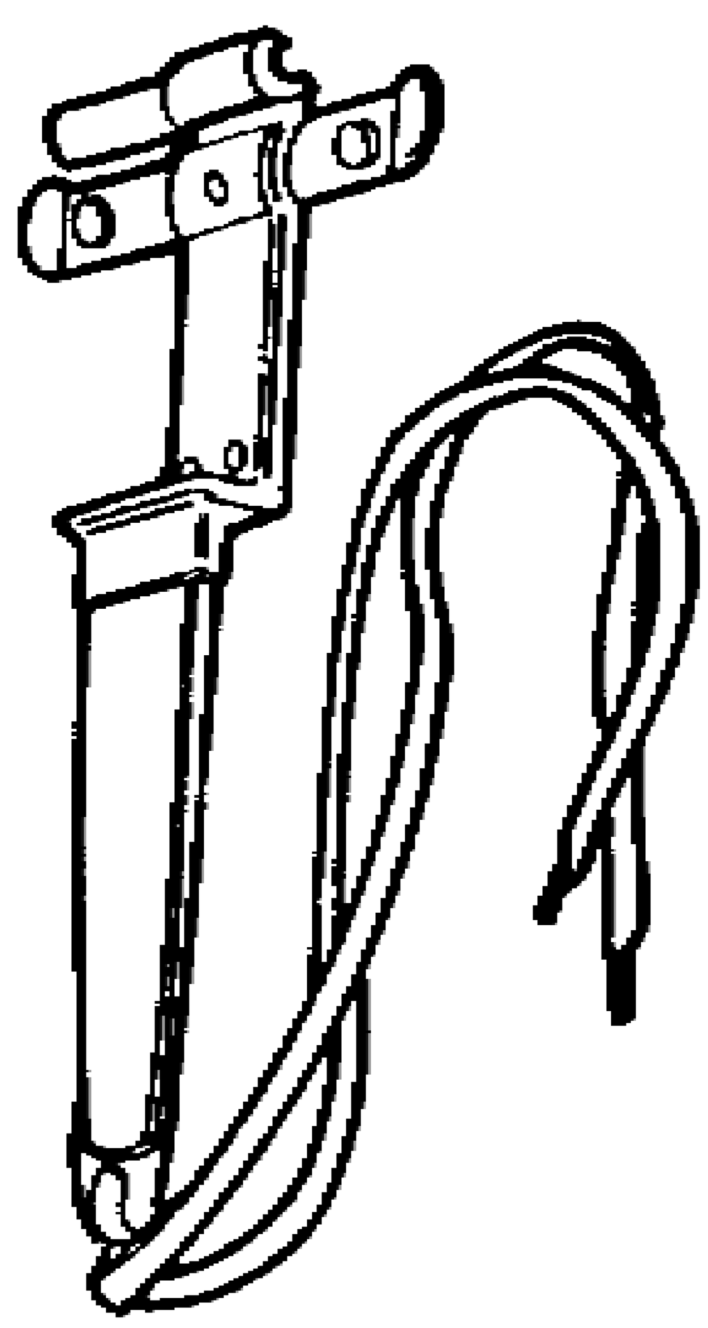
INITIAL SETUP

Materials/Parts
- Solid film lubricant (item 13, app D)
- Olive drab enamel (item 10, app D)

LOCATION	ITEM	ACTION	REMARKS

INSPECTION/REPAIR

LOCATION	ITEM	ACTION	REMARKS
	Bayonet-Knife Scabbard M8A1 or M10	Inspect metal parts. Metal parts shall be dark in color. Worn metal area will be repaired by applying solid film lubricant (item 13, app D). Inspect scabbard for chipped, exposed fabric, scratched or marred surfaces. Repair by smoothing as required and paint with olive drab lusterless paint (item 10, app D). Inspect lace. Clean and/or replace damaged lace.	



4-12. LOW LIGHT LEVEL SIGHT.

This task covers:

a. Removal
b. Inspection
c. Installation
d. Wrapping and Packaging

INITIAL SETUP

General Safety Instructions

Low light level sights will be removed from weapons that are unserviceable or are being disposed of, transferred, or turned in.



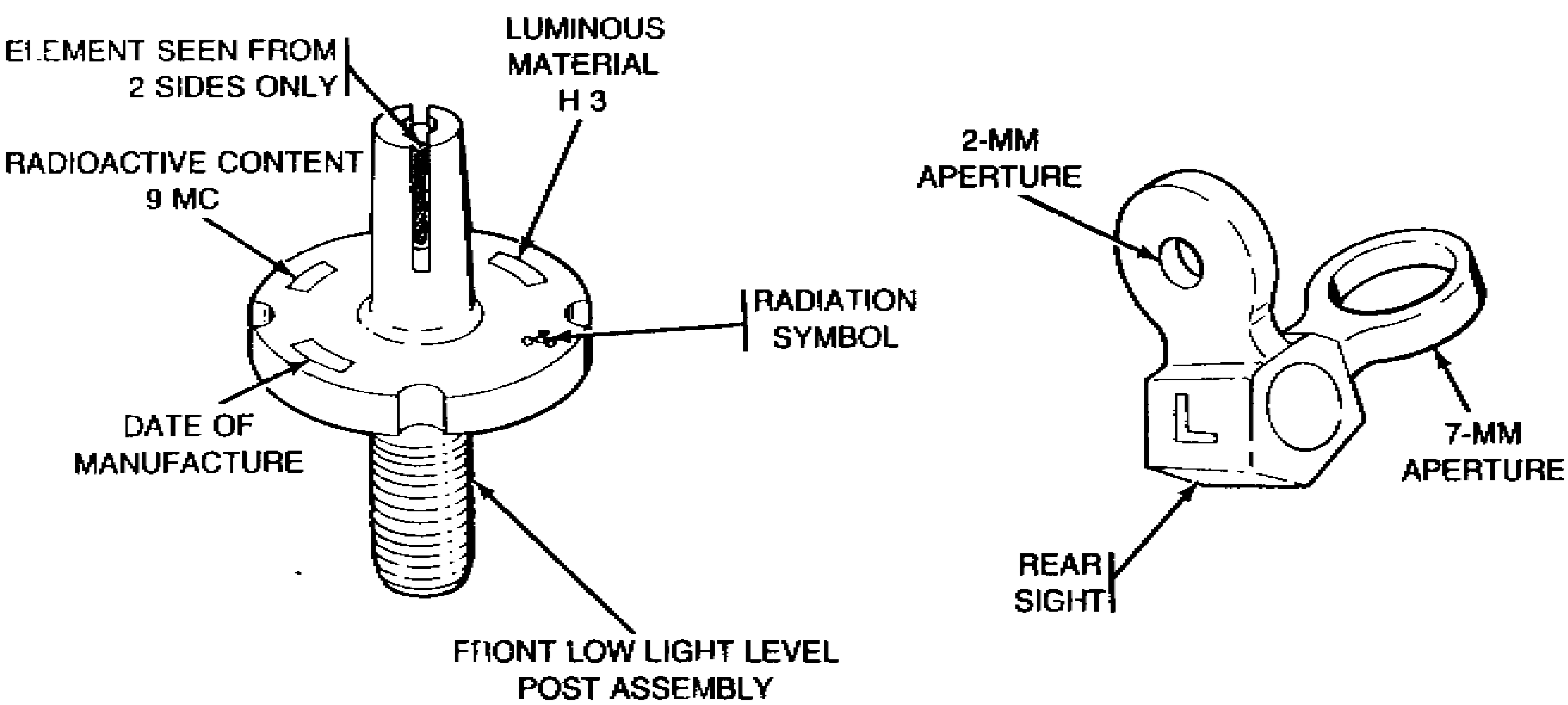
Front low light level sight contains radioactive material. Do not insert metal objects into the post slot or otherwise treat roughly to cause breakage of the radioactive element.

Do not eat, drink, or smoke while working on the low light level sights.

LOCATION	ITEM	ACTION	REMARKS

REMOVAL

1	Front low light level sight	Remove using procedures prescribed for standard sight.	See page 2-32.
2	Rear low light level sight	Remove using procedures prescribed for standard rear sight.	See page 3-42.



LOCATION	ITEM	ACTION	REMARKS
INSPECTION			
	Front low light level sight	Inspect for breaks or damage to radioactive element.	See page 2-14.
		Inspect manufacture date. Replace if more than 144 months have elapsed.	
INSTALLATION			
1	Front low light level sight	Install using prescribed procedures for standard sight.	See page 2-32.
2	Rear low light level sight	Install using prescribed procedures for standard sight.	See page 3-45.
WRAPPING AND PACKAGING			
	Low light level sight	Broken sight post will be removed and placed in a plastic bag. All defective and/or outdated components will be returned to the storage activity for disposal in accordance with AR 385-11.	
		Low light level sight systems that have been removed from rifles will be protected by applying a protective, chemically-neutral paper conforming to MIL-P-17667 (SB 38-100) and placing in a plastic bag. Final packaging will be in accordance with instructions provided in MIL-STD-1169, pending possible reuse or disposal. These packaging criteria are furnished since a terminal test for radiation and luminosity will be required.	

APPENDIX A
REFERENCES

A-1. TECHNICAL BULLETINS.

TB 9-1000-247-34	Standards for Oversea Shipment or Domestic Issue of Small Arms, Aircraft Armament, Towed Howitzers, Mortars, Recoilless Rifles, Rocket Launchers and Associated Fire Control Equipment
TB 43-0002-73	Maintenance Expenditures Limits for FSC-10 FSC Classes 1005, 1010, 1015, 1030, 1055, 1090, and 1095
TB 43-0196	Inspection and Certification of Gages, Small Arms

A-2. TECHNICAL MANUALS.

TM 38-750	The Army Maintenance Management System (TAMMS)
TM 740-90-1	Administrative Storage of Equipment
TM 9-1005-237-15P	Organizational, Direct Support and General Support, and Depot Maintenance Repair Parts and Special Tools List: Bayonet-Knife M4, M5, M5A1, M6 and M7, with Bayonet-Knife Scabbard M8A1
TM 9-1005-249-10	Operator's Manual: M16A1 Rifle
TM 9-1005-301-30	Direct Support Maintenance Manual: Repair of Wooden, Fiber Glass/Plastic or Plastic Components of Small Arms Weapons
TM 9-1010-221-24&P	Organizational, Direct Support and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Launcher, Grenade: 40-mm M203 W/E (NSN 1010-00-179-6447)
TM 11-1090-268-13	Operator, Organizational, and Direct Support Maintenance Manual: Night Vision Sight, Individual Served Weapon
TM 11-5855-203-13	Operator, Organizational and Direct Support Maintenance Manual Including Repair Parts and Special Tools Lists: Night Vision Sight, Individual Served Weapons AN/PVS-2 (NSN 5585-00-087-2947) and AN/PVS-24 (NSN 5585-00-179-3708)

A-3. ARMY REGULATIONS.

AR 385-11	Ionizing Radiation Protection (Licensing, Control, Transportation, Disposal, and Radiation Safety)
AR 700-64	Radioactive Commodities in the DOD Supply System. (NAVSUPPUB 5012/AFM 67-8/MCO P4400.105/DSAM 4145.8)

A-4. FIELD MANUALS.

FM 21-11	First Aid for Soldiers
FM 23-9	M16A1 Rifle and Rifle Marksmanship

A-5. RELATED PUBLICATIONS.

CTA 50-970	Expendable Items (Except: Medical, Class V, Repair Parts and Heraldic Items)
MIL-STD-1169	Packaging, Packing and Marking for Shipment of Inert Ammunition Components
SB 38-100	Preservation, Packaging, Packing and Marking Materials, Supplies and Equipment Used by the Army

APPENDIX B
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in section II designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component will be consistent with the capacities and capabilities of the designated maintenance categories.

c. Section III lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follows: (except for ammunition MAC).

a. *Inspect.* To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

b. *Test.* To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. *Service.* Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases.

d. *Adjust.* To maintain or regulate, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

e. *Aline.* To adjust specified variable elements of an item to bring about optimum or desired performance.

f. *Calibrate.* To determine and cause corrections to be made or to be adjusted on instruments or test, measuring, and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. *Remove/Install.* To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of emplacing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. *Replace.* To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and is shown as the 3d position code of the SMR code.

i. *Repair.* The application of maintenance services[1], including fault location/troubleshooting[2], removal/installation, and disassembly/assembly[3] procedures, and maintenance actions[4] to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. *Overhaul.* That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

[1]Services - inspect, test, service, adjust, aline, calibrate, and/or replace.

[2]Fault locate/troubleshoot - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

[3]Disassemble/assemble - encompasses the step-by-step taking apart (or breakdown) of a spare/functional group coded item to the level of its least componency identified as maintenance significant (i.e., assigned an SMR code) for the category of maintenance under consideration.

[4]Actions - welding, grinding, riveting, straightening, facing, remachinery, and/or resurfacing.

k. *Rebuild.* Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

a. *Column 1, Group Number.* Column 1 lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the next higher assembly. End item group number shall be "00."

b. *Column 2, Component/Assembly.* Column 2 contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. *Column 3, Maintenance Function.* Column 3 lists the functions to be performed on the item listed in Column 2. (For detailed explanation of these functions, see paragraph B-2.)

d. *Column 4, Maintenance Category.* Column 4 specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column 3. This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. The symbol designations for the various maintenance categories are as follows:

C .... Operator or Crew
O .... Organizational Maintenance
F .... Direct Support Maintenance
H .... General Support Maintenance
L .... Specialized Repair Activity (SRA)
D .... Depot Maintenance

e. *Column 5, Tools and Equipment.* Column 5 specifies, by code, those common tool sets (not individual tools) and special tools, TMDE, and support equipment required to perform the designated function.

f. *Column 6, Remarks.* This column shall, when applicable, contain a letter code, in alphabetic order, which shall be keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III.

a. *Column 1, Reference Code.* The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column 5.

b. *Column 2, Maintenance Category.* The lowest category of maintenance authorized to use the tool or test equipment.

c. *Column 3, Nomenclature.* Name or identification of the tool or test equipment.

d. *Column 4, National Stock Number.* The National stock number of the tool or test equipment.

e. *Column 5, Tool Number.* The manufacturer's part number.

B-5. EXPLANATION OF COLUMNS IN REMARKS, SECTION IV.

a. *Column 1, Reference Code.* The code recorded in column 6, Section II.

b. *Column 2, Remarks.* This column lists information pertinent to the maintenance function being performed as indicated in the MAC, Section II.

Section II. MAINTENANCE ALLOCATION CHART

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT	(6) REMARKS
			C	O	F	H	D		
00	M16/M16A1 RIFLE	Inspect	0.1	0.2	0.3				
		Test		0.1	0.3			4	
		Service	0.2	0.3					
		Replace		0.1					
		Repair		0.1					A
		Overhaul					**		
01	BOLT CARRIER ASSEMBLY	Inspect	0.1	0.1	0.1				
		Test			0.1			4	
		Service	0.1	0.1					
		Install	0.1	0.1	0.1				
		Replace			0.1				
		Repair		0.1	0.2			2, 3	
0101	Bolt Assembly	Inspect	0.1	0.1	0.1				
		Test			0.1			4	
		Service	0.1	0.1					
		Install	0.1	0.1	0.1				
		Replace			0.1				
		Repair		0.2	0.2			2, 3	
0102	Key and Bolt Carrier Assembly	Inspect	0.1	0.1	0.1				
		Service	0.1	0.1					
		Install	0.1	0.1	0.1				
		Replace			0.1				
		Repair			0.2			2, 3	A
02	CHARGING HANDLE ASSEMBLY	Inspect	0.1	0.1					
		Service	0.1						
		Install	0.1	0.1					
		Replace		0.1					
		Repair		0.1				2	
03	UPPER RECEIVER AND BARREL ASSEMBLY	Inspect	0.1	0.2	0.1				
		Test			0.2				
		Service	0.2	0.2					
		Install	0.1	0.1	0.1				
		Replace			1.2				
		Repair		0.5	0.5			2, 3, 4	
0301	Rifle Barrel Assembly	Inspect	0.1	0.2					
		Replace			0.5				
		Repair		0.2				2	B

**Worktimes are included in DMWR 9-1005-249.

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQPT	(6) REMARKS
			C	O	F	H	D		
0302	Upper Receiver Assembly	Inspect	0.1		0.1				
		Install			0.2				
		Replace			0.5				
		Repair		0.3	0.3			2, 3	
030201	Forward Assist Assembly	Inspect	0.1	0.1	0.1				
		Install			0.2				
		Replace			0.2				
		Repair			0.2			2, 3	
04	LOWER RECEIVER AND EXTENSION ASSEMBLY	Inspect	0.1	0.2	0.2				
		Test			0.1			4	
		Service	0.2	0.2					
		Install	0.1	0.1	0.1				
		Repair		0.3	0.3			2, 3, 4	C, D, C, D
0401	Shoulder Gun Stock Assembly	Inspect	0.1	0.1	0.1				
		Install		0.1	0.1				
		Replace			0.1				
		Repair		0.1				2	E
0402	Hammer Assembly	Inspect	0.1	0.1	0.1				
		Install			0.1				
		Replace			0.1				
		Repair			0.1			2, 3	
0403	Trigger Assembly	Inspect	0.1	0.1	0.1				
		Install			0.1				
		Replace			0.1				
		Repair			0.1			2, 3	
0404	Lower Receiver and Extension Subassembly	Inspect			0.1				
		Test			0.1			4	
		Install			0.1				
		Repair			0.3	0.1		1, 2, 3, 4	F

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR M16/M16A1 RIFLE

(1) TOOL OR TEST EQUIPMENT REF CODE	(2) MAINTE-NANCE CATE-GORY	(3) NOMENCLATURE	(4) NATIONAL/NATO STOCK NUMBER	(5) TOOL NUMBER
1	H	Shop Set, Small Arms: Field Maintenance Post, Camp, and Station, Set D	4933-00-348-7396	SC 4933-95-CL-A04
2	O, F	Tool Kit, Small Arms Repairman	5180-00-357-7770	SC 5180-95-CL-A07
3	F	Shop Set, Small Arms: Field Maintenance, Basic Less Power	4933-00-754-0664	SC 4933-95-CL-A11
4	F	Tool and Gage Set, DS/GS Maintenance for 5.56-mm Rifle, M16 Series and M231 Firing Port Weapon	4933-00-056-7106	8426685

Section IV. REMARKS

REFERENCE CODE	REMARKS
A	Tool, Key
B	Tool, Sight Remover
C	Tool, Pivot Pin Removing
D	Gage Receiver
E	TM 9-1005-301-30
F	Only general support level maintenance is authorized to restamp serial numbers
G	Tool, Low Light Level Sight

APPENDIX C
ORGANIZATIONAL, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

C-1. SCOPE. This appendix lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of organizational, direct support, and general support maintenance of the 5.56-mm Rifle M16 and M16A1. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the Source, Maintenance and Recoverability (SMR) codes.

C-2. GENERAL. This Repair Parts and Special Tools List is divided into the following sections:

a. *Section II. Repair Parts List.* A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Bulk materials are listed in NSN sequence.

b. *Section III. Special Tools List.* A list of special tools, special TMDE, and other special support equipment authorized by this RPSTL for the performance of maintenance.

c. *Section IV. National Stock Number and Part Number Index.* A list, in National item identification number (NIIN) sequence, of all National stock numbers (NSN) appearing in the listings, followed by a list in alphanumeric sequence of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

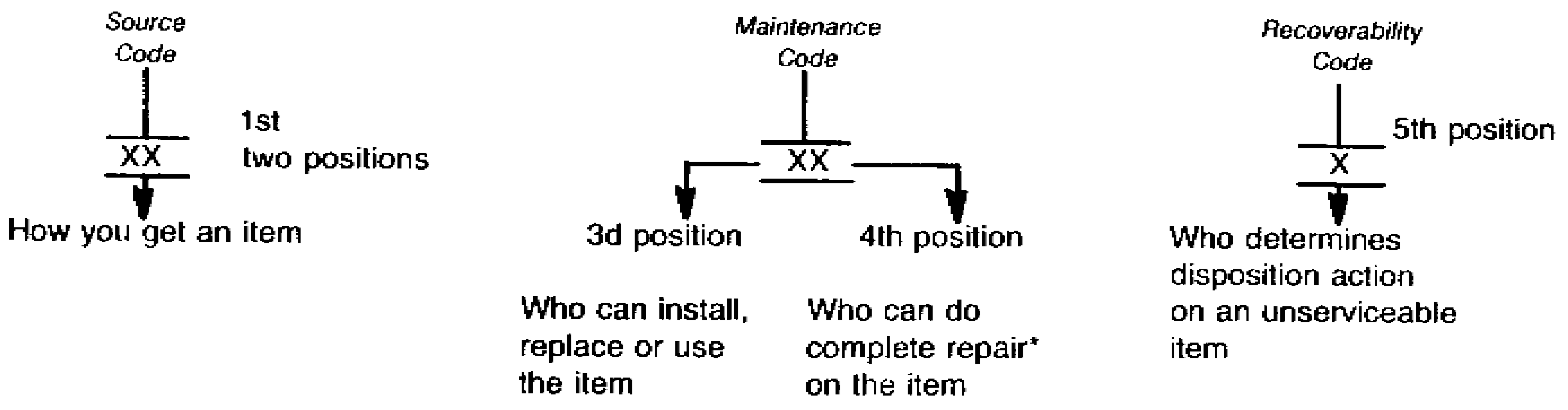
3. EXPLANATION OF COLUMNS.

a. *ILLUSTRATION (Column (1)).* This column is divided as follows:

(1) ((a) FIG NO.) Figure number. Indicates the figure number illustrating an exploded view of a functional group.

(2) ((b) ITEM NO.). Indicates the number used to identify items called out in the illustration.

b. *SMR CODE (Column (2)).* The Source, Maintenance, and Recoverability (SMR) code is a 5-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instructions, as shown in the following breakout:



*Complete Repair: Maintenance capacity, capability, and authority to perform all the corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

(1) Source code. The source code tells you how you get an item needed for maintenance, repair, or overhaul of an end item/equipment. Source codes are always the first two positions of the SMR code. Explanations of source codes follow:

Code	*Explanation*
PA PB PC PD PE PF PG	Stocked items; use the applicable NSN to request/requisition items with these source codes. They are authorized to the category indicated by the code entered in the 3d position of the SMR code.
KD KF KB	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance category indicated in the 3d position of the SMR code. The complete kit must be requisitioned and applied.
MO-(Made at Org/ AVUM Category) MF-(Made at DS/ AVIM Category) MH-(Made at GS Category) MD-(Made at Depot)	Items with these codes are not to be requested/requisitioned individually. They must be made from bulk material which is identified by NSN in the Description column and listed in the Bulk Material group in the repair parts list in this appendix. If the item is authorized to you by the 3d position code of the SMR code, but the source code indicates it is made at a higher category, order the item from the higher category of maintenance.

Code	*Explanation*
AO-(Assembled by Org/AVUM Category) AF-(Assembled by DS/AVIM Category) AH-(Assembled by GS Category) AD-(Assembled by Depot)	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the category of maintenance indicated by the source code. If the 3d position code of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher category, order the item from the higher category of maintenance.

XA - Do not requisition an "XA"-coded item. Order its next higher assembly. (Also, refer to the NOTE below.)

XB - If an "XB" item is not available from salvage, order it using the FSCM and part number given.

XD - Item is not stocked. Order an "XD"-coded item through normal supply channels using the FSCM and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 700-42.

(2) Maintenance code. Maintenance codes tell you the category(s) of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR Code as follows:

(a) The maintenance code entered in the third position tells you the lowest maintenance category authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to one of the following categories of maintenance.

Code	*Application/Explanation*
C	- Crew or operator maintenance done within organizational or aviation unit maintenance.
O	- Organizational or aviation unit category can remove, replace, and use the item.
F	- Direct support or aviation intermediate category can remove, replace, and use the item.
H	- General support category can remove, replace, and use the item.
L	- Specialized repair activity can remove, replace, and use the item.
D	- Depot category can remove, replace, and use the item.

(b) The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance category with the capability to do complete repair (i.e., perform all authorized repair functions). (NOTE: Some limited repair may be done on the item at a lower category of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.) This position will contain one of the following maintenance codes.

Code	*Application/Explanation*
O	- Organizational or aviation unit is the lowest category that can do complete repair of the item.
F	- Direct support or aviation intermediate is the lowest category that can do complete repair of the item.
H	- General support is the lowest category that can do complete repair of the item.
L	- Specialized repair activity (designate the specialized repair activity) is the lowest category that can do complete repair of the item.
D	- Depot is the lowest category that can do complete repair of the item.
Z	- Nonreparable. No repair is authorized.
B	- No repair is authorized. (No parts or special tools are authorized for the maintenance of a "B"-coded item.) However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

(3) Recoverability code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR Code as follows:

Recoverability Codes	*Definition*
Z	- Nonreparable item. When unserviceable, condemn and dispose of the item at the category of maintenance shown in 3d position of SMR Code.
O	- Reparable item. When uneconomically reparable, condemn and dispose of the item at organizational or aviation unit category.
F	- Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support or aviation intermediate category.
H	- Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support category.
D	- Reparable item. When beyond lower category repair capability, return to depot. Condemnation and disposal of item not authorized below depot category.
L	- Reparable item. Condemnation and disposal not authorized below specialized repair activity.
A	- Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. *NATIONAL STOCK NUMBER (Column (3)).* Lists the National stock number (NSN) assigned to the item. Use the NSN for requests/requisitions.

d. *FSCM (Column (4)).* The Federal Supply Code for Manufacturer (FSCM) is a 5-digit numeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

e. *PART NUMBER (Column (5)).* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number from the part ordered, but go ahead and use or furnish it as the replacement part.

f. *DESCRIPTION (Column (6)).* This column includes the following information:

(1) The Federal item name and, when required, a minimum description to identify the item.

(2) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(3) NSN's for bulk materials are referenced in the description column in the line item entry for the item to be manufactured/fabricated.

(4) When the part to be used differs between serial numbers of the same model, the effective serial numbers are shown as the last line of the description.

(5) The USABLE ON CODE, when applicable (see paragraph C-4, SPECIAL INFORMATION).

(6) In the Special Tools List Section, the basis of issue (BOI) appears as the last line(s) in the entry for each special tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased proportionately.

g. *U/M (Column (7)).* The Unit of Measure (UM) indicates the measure (e.g., foot, gallon, pound) or count (e.g., each, dozen, gross) of a listed item. A two-character alpha code (e.g., FT, GL, LB, EA, DZ, GR) appears in this column to indicate the measure or count. If the U/M code appearing in this column differs from the Unit of Issue (U/I) code listed in the Army Master Data File (AMDF), request the lowest U/I that will satisfy your needs.

h. *QTY INC IN UNIT (Column (8)).* The Quantity Incorporated in Unit (QTY INC IN UNIT) indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable (e.g., shims, spacers).

C-4. SPECIAL INFORMATION.

a. The "USABLE ON CODE" title appears in the lower right corner of column (6), Description. Usable on codes are shown in the right-hand margin of the description column. Uncoded items are applicable to all models. Identification of the usable on codes used in this publication are:

Code	*Used ON*
755	M16
194	M16A1

b. Detailed assembly instructions for items source coded to be assembled from component spare/repair parts are found in chapter 3. Items that make up the assembly are listed immediately following the assembled item entry.

C-5. HOW TO LOCATE REPAIR PARTS.

a. *When National Stock Number or Part Number is not Known:*

(1) First. Using the table of contents, determine the functional group or subfunctional group to which the item belongs. This is necessary since figures are prepared for functional groups and subfunctional groups, and listings are divided into the same groups.

(2) Second. Find the figure covering the functional group or subfunctional group to which the item belongs.

(3) Third. Identify the item on the figure and note the item number of the item.

(4) Fourth. Refer to the Repair Parts List for the figure to find the line item entry for the item number noted on the figure.

b. *When National Stock Number or Part Number is Known:*

(1) First. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. The NSN index is in National Item Identification Number (NIIN)* sequence. The part numbers in the Part Number index are listed in ascending alphanumeric sequence. Both indexes cross-reference you to the illustration figure and item number of the item you are looking for.

NSN

*The NIIN consists of the last 9 digits of the NSN (i.e., 5305-01-674-1467).

NIIN

(2) Second. After finding the figure and item number, verify that the item is the one you're looking for, then locate the item number in the repair parts list for the figure.

C-6. ABBREVIATIONS. Not applicable.

Section II. REPAIR PARTS LIST

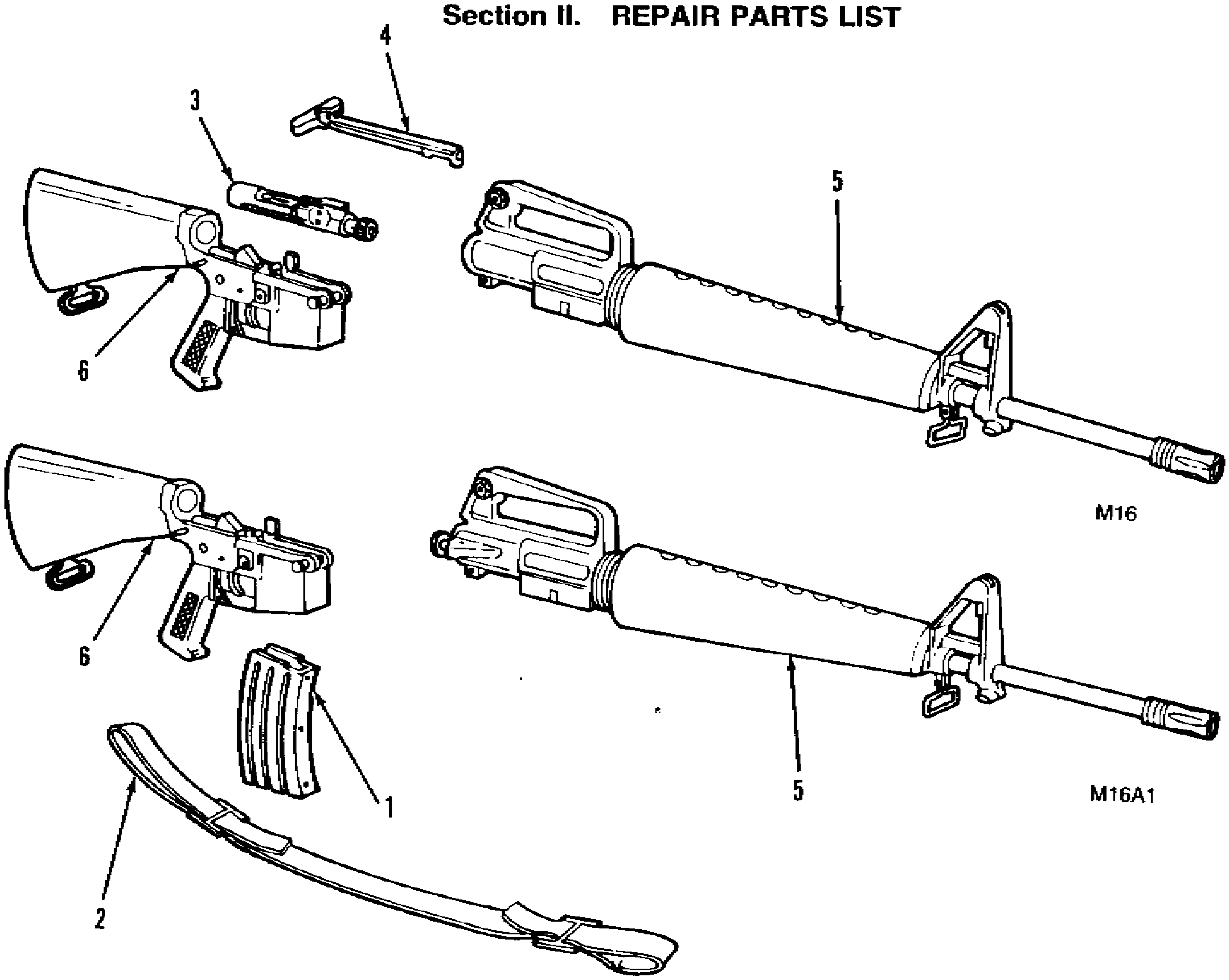


Figure C-1. 5.56-mm Rifle M16 and M16A1 AR 922731

(1) ILLUSTRATION (a) FIG NO.	(b) ITEM NO.	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 00 5.56-MM RIFLE M16 AND M16A1		
C-1	1	PACZZ	1005-00-921-5004	19200	8448670	MAGAZINE, CARTRIDGE	EA	1
C-1	2	PAOZZ	1005-00-167-4336	19200	8448770	SLING, SMALL ARMS	EA	1
C-1	3	AFFFF		19204	8448501	BOLT CARRIER ASSEMBLY	EA	1
C-1	4	PAODO	1005-00-017-9546	19204	8448517	HANDLE ASSEMBLY	EA	1
C-1	5	AFFFF		19204	8448601	UPPER RECEIVER AND BARREL ASSY, M16 755	EA	1
C-1	5	AFFFF		19204	8448522	UPPER RECEIVER AND BARREL ASSY, M16A1 194	EA	1
C-1	6	XAFFA		19204	8448604	LOWER RECEIVER AND EXTENSION ASSY, M16 755	EA	1
C-1	6	XAFFA		19204	8448578	LOWER RECEIVER AND EXTENSION ASSY, M16A1 194	EA	1

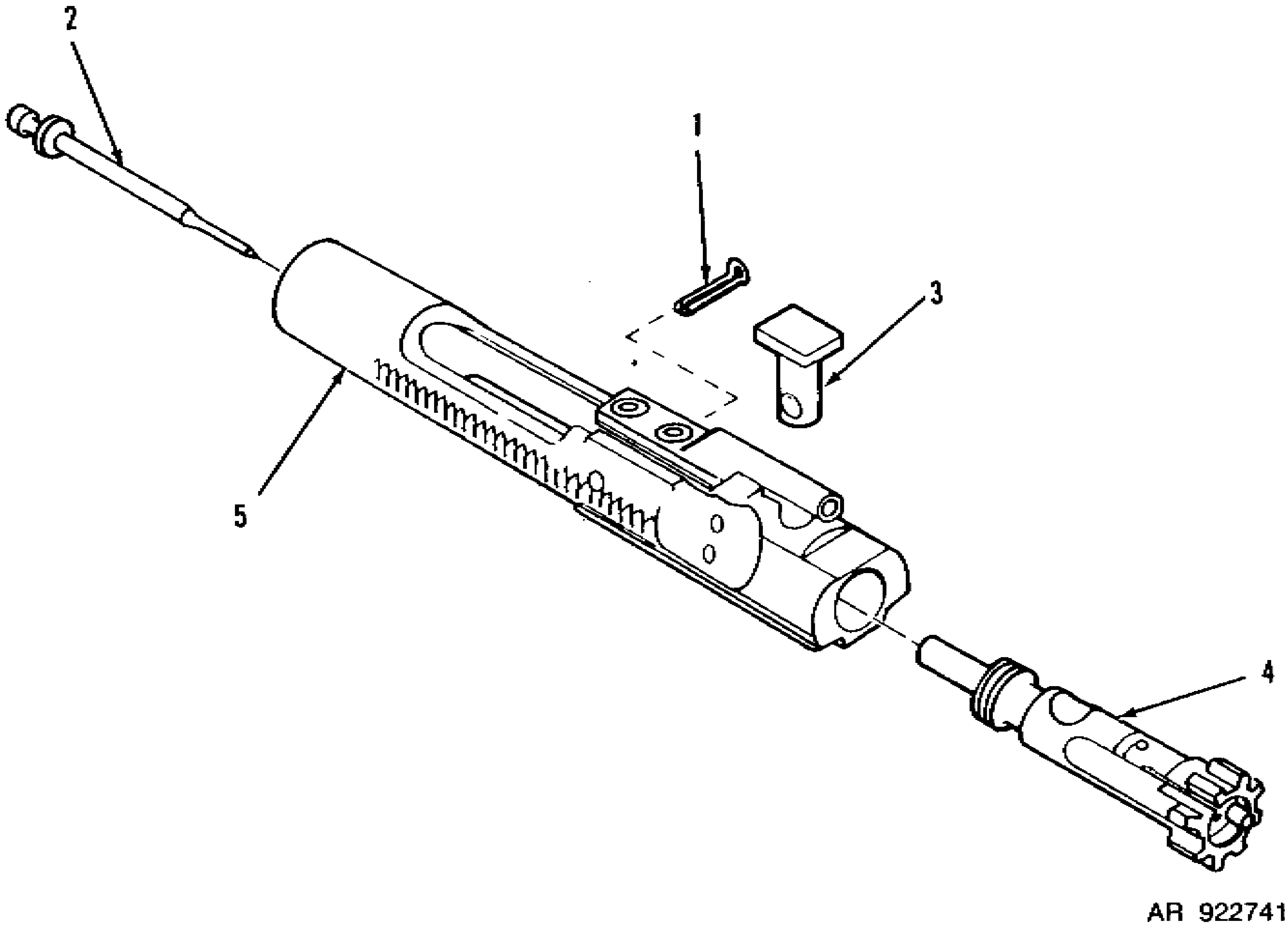


Figure C-2. Bolt carrier assembly 8448501

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01 BOLT CARRIER ASSEMBLY 8448501		
C-2	1	PAOZZ	1005-00-999-1509	19204	8448504	PIN, FIRING PIN RETAINING	EA	1
C-2	2	PAFZZ	1005-00-017-9547	19204	8448503	PIN, FIRING	EA	1
C-2	3	PAOZZ	1005-00-992-7294	19204	8448502	PIN, BOLT CAM	EA	1
C-2	4	PAFFF	1005-00-992-7285	19200	8448509	BOLT ASSEMBLY	EA	1
C-2	5	AFFFF		19204	8448505	KEY AND BOLT CARRIER ASSEMBLY	EA	1

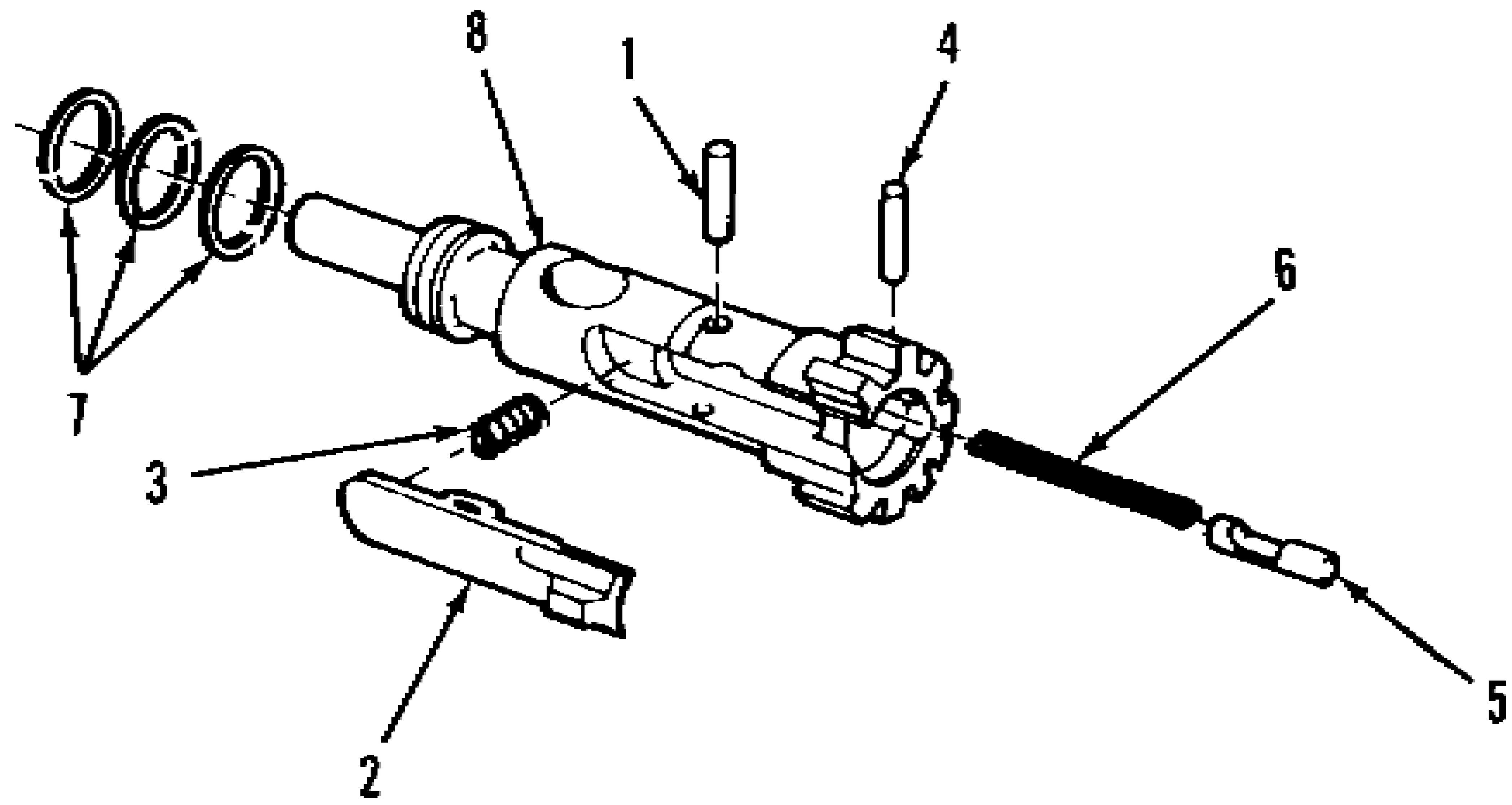


Figure C-3. Bolt assembly 8448509

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0101 BOLT ASSEMBLY		
						8448509		
C-3	1	PAOZZ	1005-00-992-7290	19204	8448513	PIN, EXTRACTOR	EA	1
C-3	2	PAOZZ	1005-00-992-7288	19204	8448512	EXTRACTOR, CARTRIDGE	EA	1
C-3	3	PAOZZ	1005-00-760-3768	19200	8448755	SPRING ASSEMBLY, EXT	EA	1
C-3	4	PAOZZ	5315-00-597-5086	96906	MS16562-98	PIN, SPRING	EA	1
C-3	5	PAOZZ	1005-00-992-7291	19204	8448515	EJECTOR, CARTRIDGE	EA	1
C-3	6	PAOZZ	5360-00-992-7292	19204	8448516	SPRING, HELICAL	EA	1
C-3	7	PAFZZ	1005-00-992-7287	19204	8448511	RING, BOLT	EA	3
C-3	8	XAFZZ		19204	8448510	BOLT	EA	1

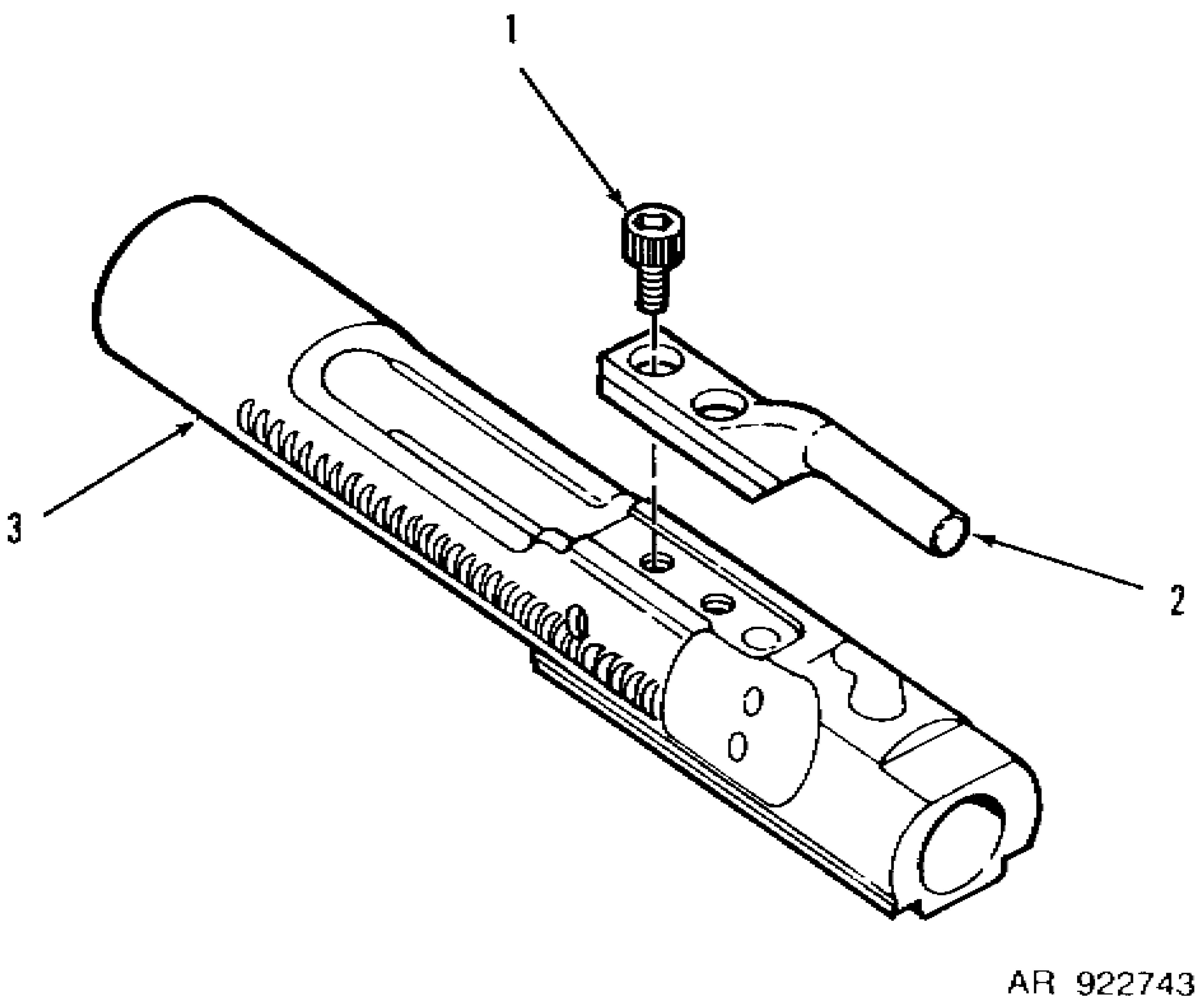


Figure C-4. Key and bolt carrier assembly 8448505

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0102 KEY AND BOLT CARRIER ASSEMBLY 8448505		
C-4	1	PAFZZ	1005-00-992-7284	19204	8448508	SCREW, CARRIER AND KEY	EA	2
C-4	2	PAFZZ	1005-00-992-7283	19200	8448506	KEY, BOLT CARRIER	EA	1
C-4	3	PAFZZ	1005-00-738-6213	19200	8448507	CARRIER, BOLT	EA	1

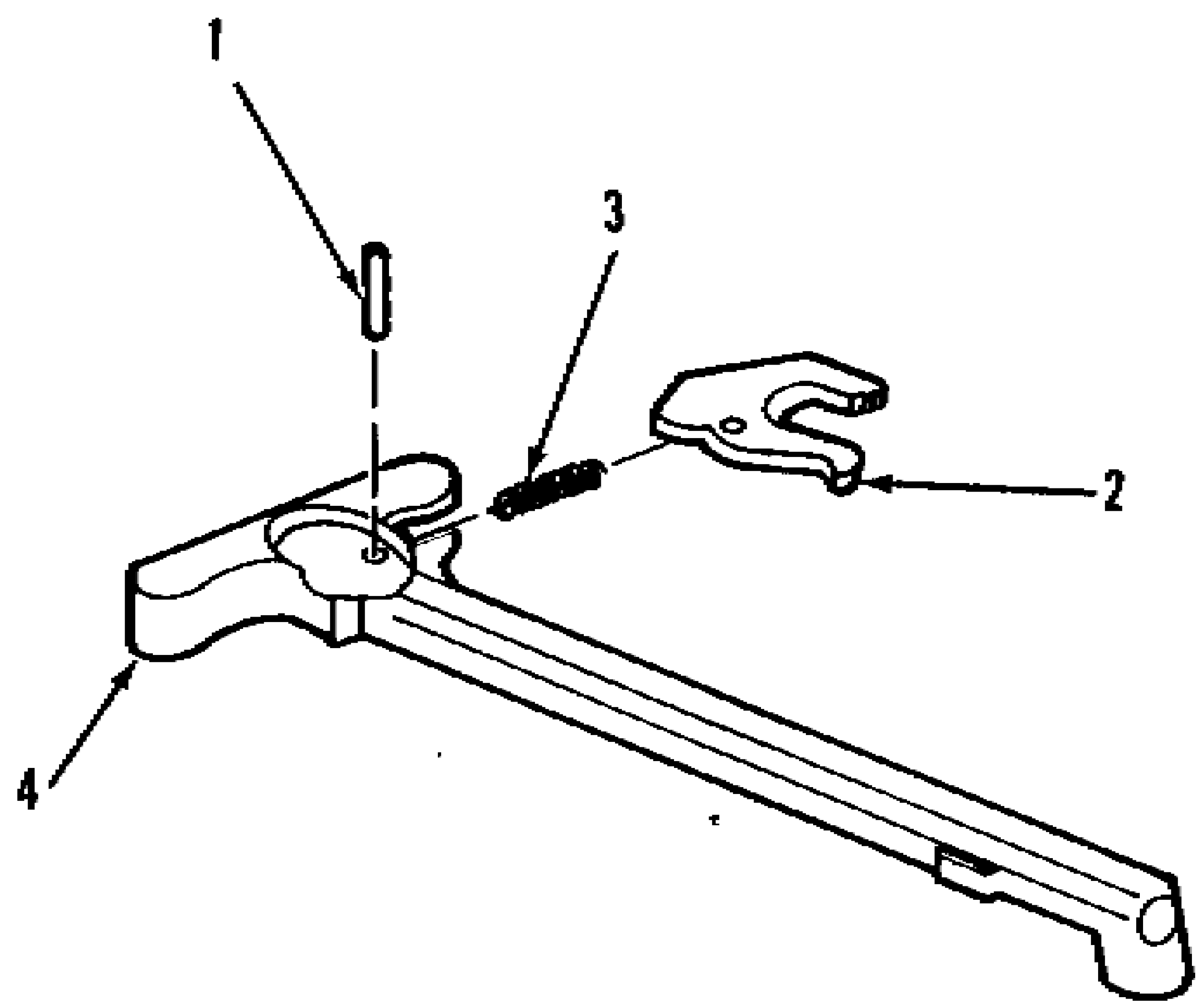


Figure C-5. Charging handle assembly 8448517

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 02 CHARGING HANDLE ASSEMBLY 8448517		
C-5	1	PAOZZ	5315-00-017-9532	13629	95113	PIN, SPRING	EA	1
C-5	2	PAOZZ	1005-00-999-0405	19200	8448519	LATCH, CHARGING HANDLE	EA	1
C-5	3	PAOZZ	5360-00-999-0404	19204	8448520	SPRING, HELICAL	EA	1
C-5	4	XAOZZ		19204	8448518	HANDLE	EA	1

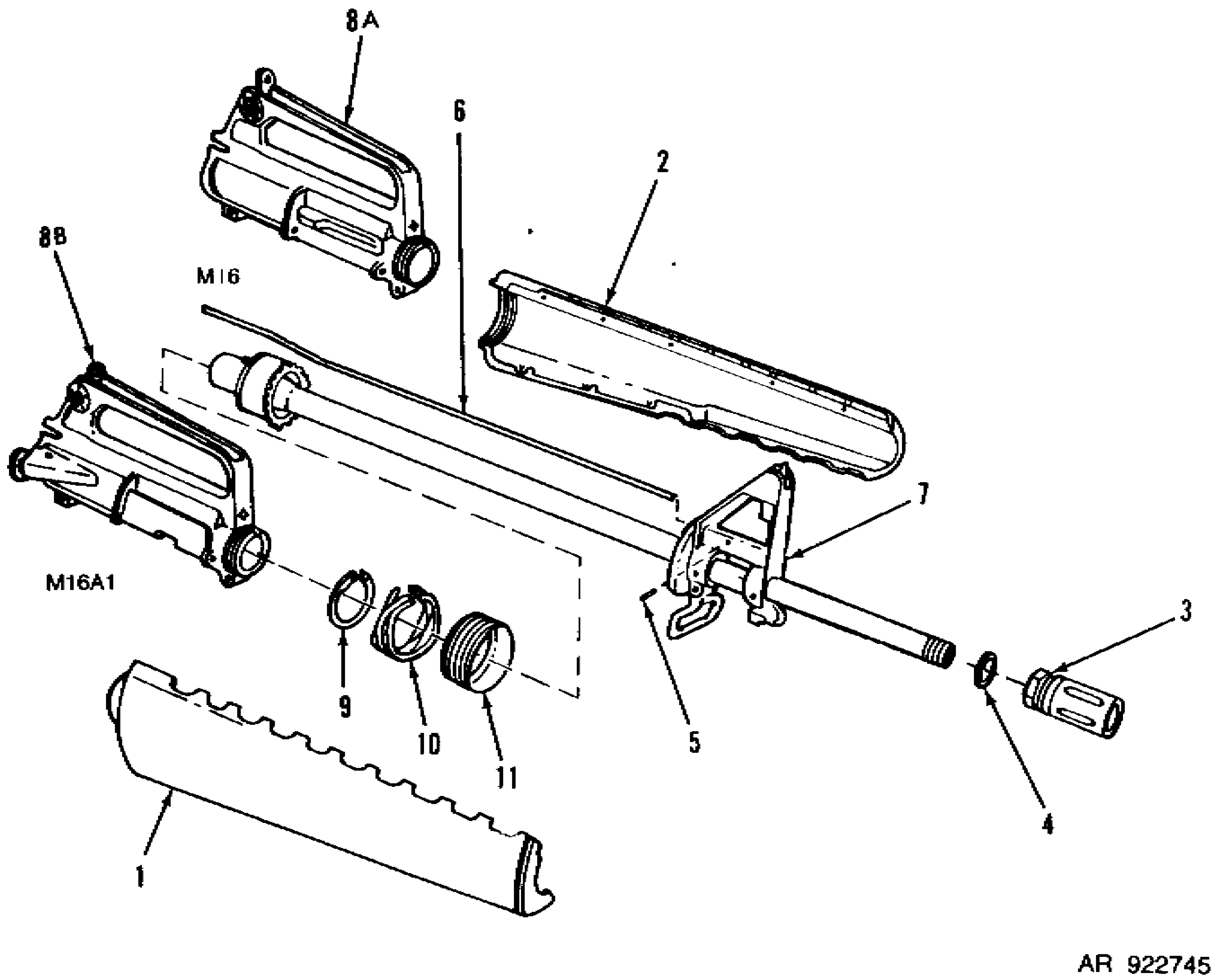


Figure C-6. Upper receiver and barrel assembly 8448601 (M16) and 8448522 (M16A1)

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 03 UPPER RECEIVER AND BARREL ASSEMBLY 8448601 (M16) AND 8448522 (M16A1)		
C-6	1	PAOZZ	1005-00-056-2251	19200	8448557	GUARD, HAND, GUN RH.	EA	1
C-6	2	PAOZZ	1005-00-056-2252	19200	8448561	GUARD, HAND, GUN LH.	EA	1
C-6	3	PAFZZ	1005-00-933-8089	19204	8448576	SUPPRESSOR, FLASH.	EA	1
C-6	4	PAFZZ	1005-00-992-7280	19204	8448577	WASHER, LOCK, FLASH SUPPRESSOR.	EA	1
C-6	5	PAFZZ	5315-00-058-6044	96906	MS16562-106	PIN, SPRING.	EA	1
C-6	6	PAFZZ	1005-00-978-1038	19200	8448567	TUBE, GAS.	EA	1
C-6	7	PAFFF	1005-00-152-3441	19204	8448663	BARREL ASSEMBLY, RIFLE.	EA	1
C-6	8	AFFFF		19204	8448602	UPPER RECEIVER ASSY, M16. 755	EA	1
C-6	8	AFFFF		19204	8448523	UPPER RECEIVER ASSY, M16A1. 194	EA	1
C-6	9	PAFZZ	5365-00-252-6853	96906	MS16626-1137	RING, RETAINING EXT, TAPERED SECTION.	EA	1
C-6	10	PAFZZ	1005-00-978-1036	19204	8448555	SPRING, SLIP RING, HANDGUARD.	EA	1
C-6	11	PAFZZ	1005-00-978-1035	19204	8448554	RING, SLIP, HAND GUARD: UPPER RECEIVER.	EA	1

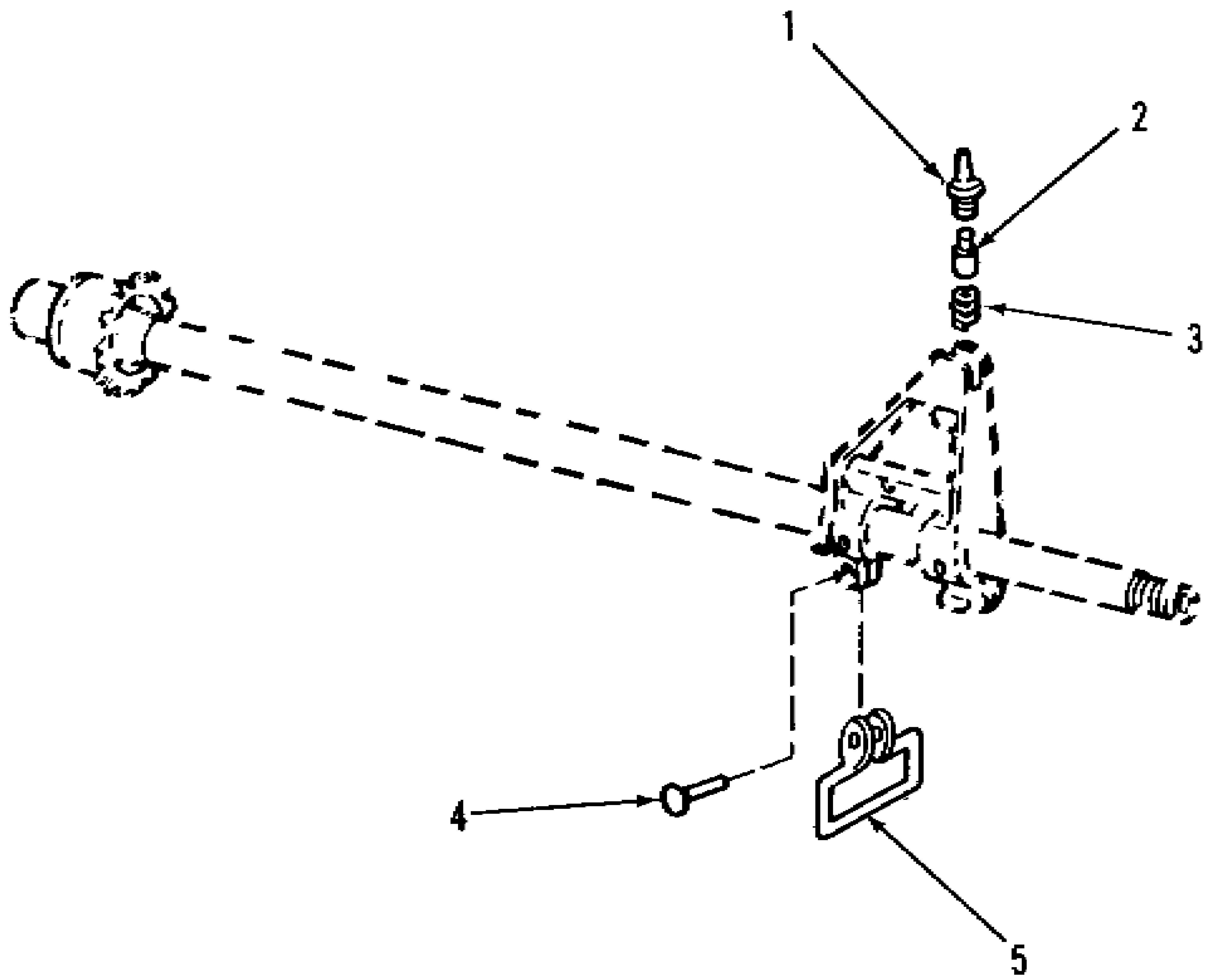


Figure C-7. Rifle barrel assembly 8448663

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0301 RIFLE BARREL ASSEMBLY 8448663		
C-7	1	PAOZZ	1005-00-979-3929	19200	8448572	POST, FRONT SIGHT	EA	1
C-7	2	PAOZZ	1005-00-979-3930	19204	8448573	DETENT, FRONT SIGHT	EA	1
C-7	3	PAOZZ	5360-00-979-3931	19204	8448574	SPRING, HELICAL	EA	1
C-7	4	PAOZZ	5320-01-063-7635	19204	8448697	RIVET, TUBULAR	EA	1
C-7	5	PAOZZ	1005-00-017-9543	19204	8448571	SWIVEL, SLING, SMALL	EA	1

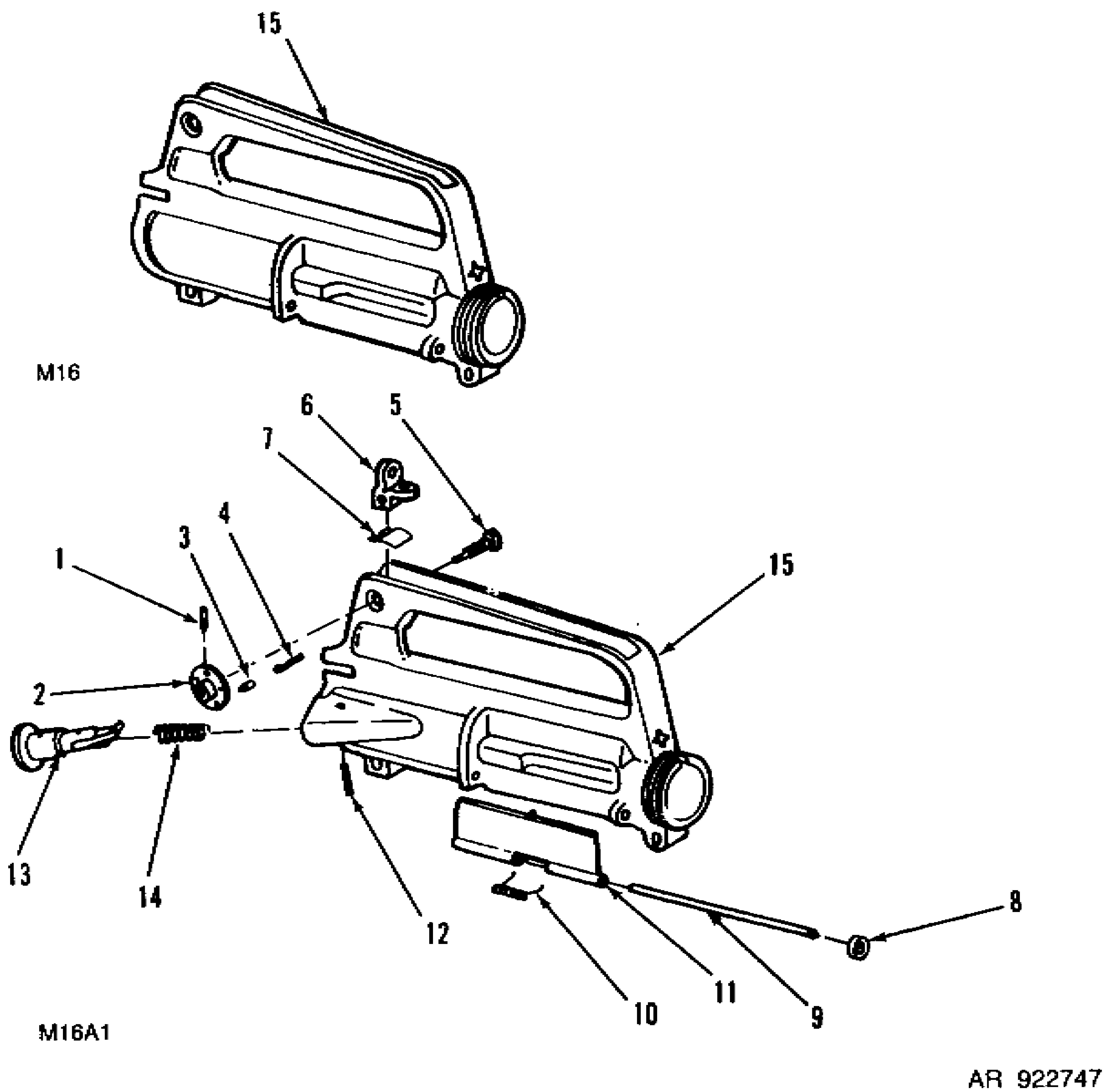


Figure C-8. Upper receiver assembly 8448602 (M16) and 8448523 (M16A1)

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION	USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0302 UPPER RECEIVER ASSEMBLY 8448602 (M16) AND 8448523 (M16A1)			
C-8	1	PAFZZ	5315-00-282-3642	96906	MS16562-96	PIN, SPRING		EA	1
C-8	2	PAFZZ	1005-00-978-1029	19200	8448535	DRUM, REAR SIGHT WINDAGE		EA	1
C-8	3	PAFZZ	1005-00-978-1030	19200	8448537	DETENT, REAR SIGHT		EA	1
C-8	4	PAFZZ	5360-00-978-1032	19200	8448538	SPRING, HELICAL, COMP		EA	1
C-8	5	PAFZZ	1005-00-978-1028	19204	8448534	SCREW, REAR SIGHT WINDAGE		EA	1
C-8	6	PAFZZ	1005-00-978-1026	19204	8448539	APERTURE SIGHT		EA	1
C-8	7	PAFZZ	5360-00-978-1027	19200	8448536	SPRING, FLAT		EA	1
C-8	8	[illegible]DZZ	5365-00-064-2652	96906	MS16632-1012	RING, RETAINING		EA	1
C-8	9	PADZZ	1005-00-978-1023	19204	8448533	PIN, EJECTION PORT COVER		EA	1
C-8	10	PADZZ	5360-00-978-1025	19204	8448532	SPRING, HELICAL		EA	1
C-8	11	PADZZ	1005-00-978-1022	19204	8448525	COVER, EJECTION		EA	1
C-8	12	PAFZZ	5315-01-027-4759	80205	NAS561-3-10	PIN, SPRING	194	EA	1
C-8	13	AFFFF		19204	8448541	FORWARD ASSIST ASSY	194	EA	1
C-8	14	PAFZZ	5360-00-017-9541	19200	8448540	SPRING, HELICAL, COMP COMPRESSION	194	EA	1
C-8	15	PAFZZ	1005-00-017-9550	19204	8448603	RECEIVER, UPPER M16	755	EA	1
C-8	15	PAFZZ	1005-00-017-9542	19200	8448524	RECEIVER, UPPER M16A1	194	EA	1

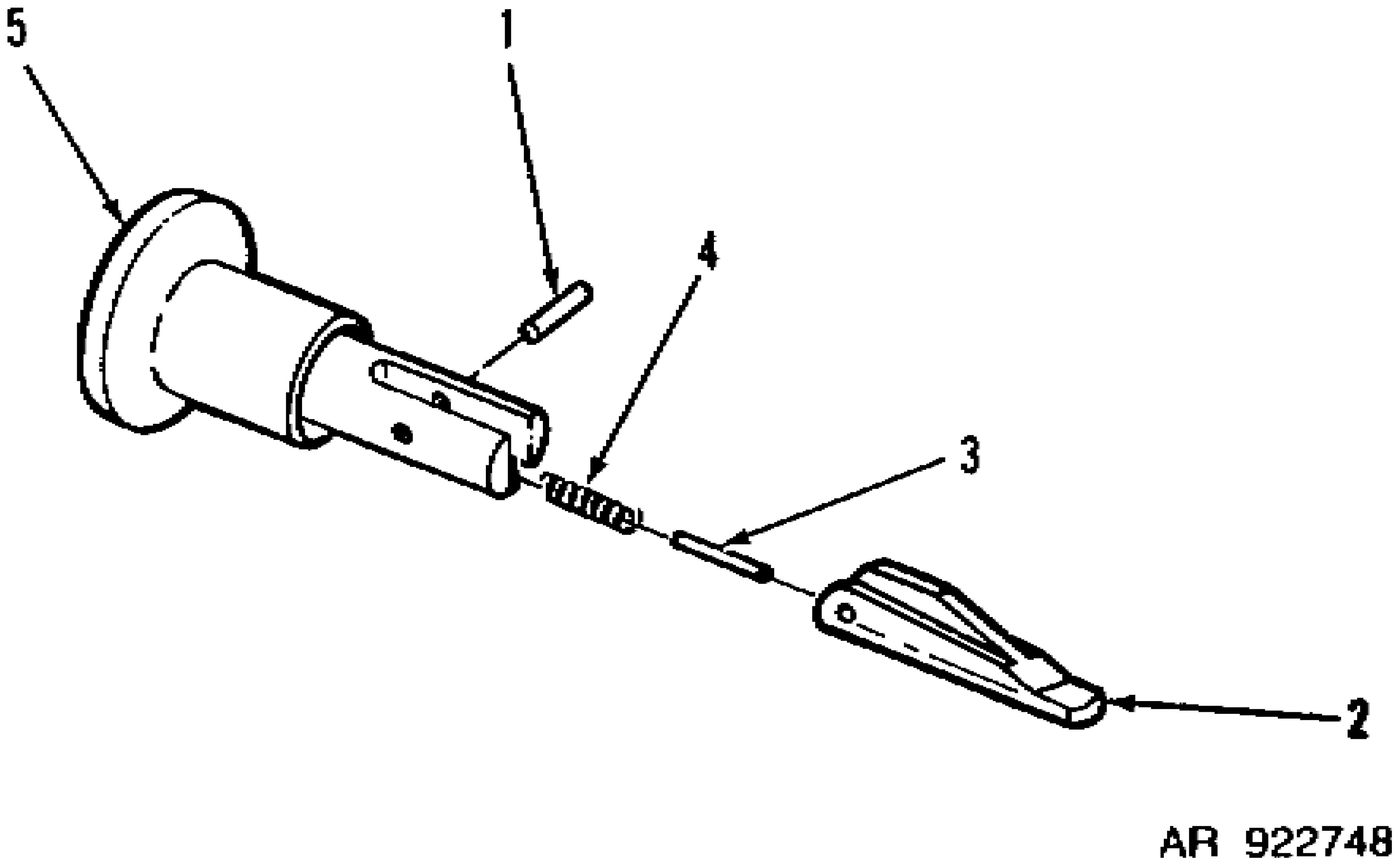
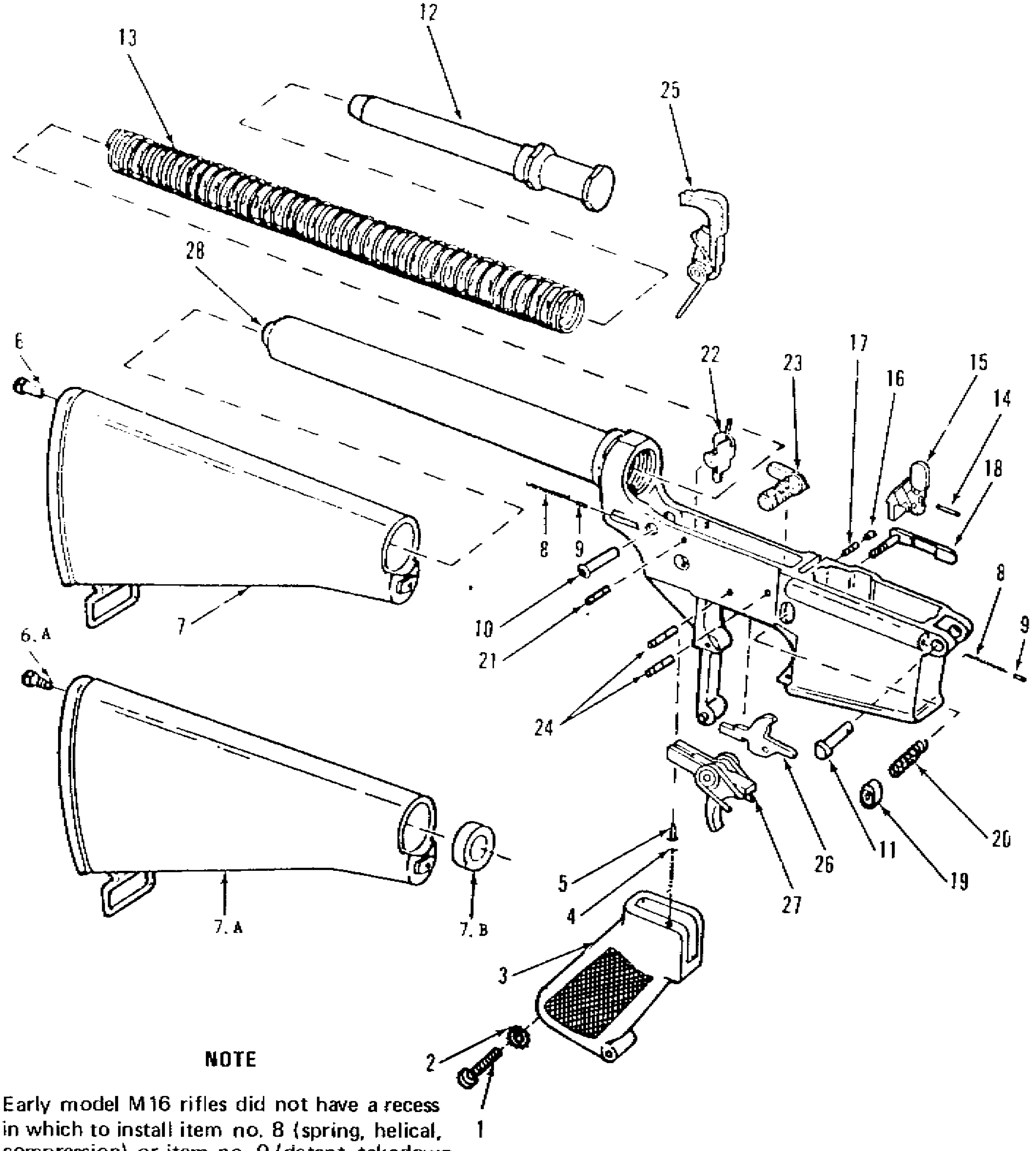


Figure C-9. Forward assist assembly 8448541 (M16A1)

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 030201 FORWARD ASSIST ASSEMBLY 8448541 (M16A1)		
C-9	1	PAFZZ	5315-00-017-9552	13629	95113	PIN, SPRING.......194	EA	1
C-9	2	PAFZZ	1005-00-017-9539	19204	8448543	PAWL, FORWARD ASSIST.......194	EA	1
C-9	3	PAFZZ	1005-00-017-9540	19204	8448544	DETENT, PAWL.......194	EA	1
C-9	4	PAFZZ	5360-00-523-8084	19200	8448542	SPRING, HELICAL, COMPRESSION.......194	EA	1
C-9	5	PAFZZ	1005-00-017-9538	19200	8448545	PLUNGER ASSEMBLY.......194	EA	1

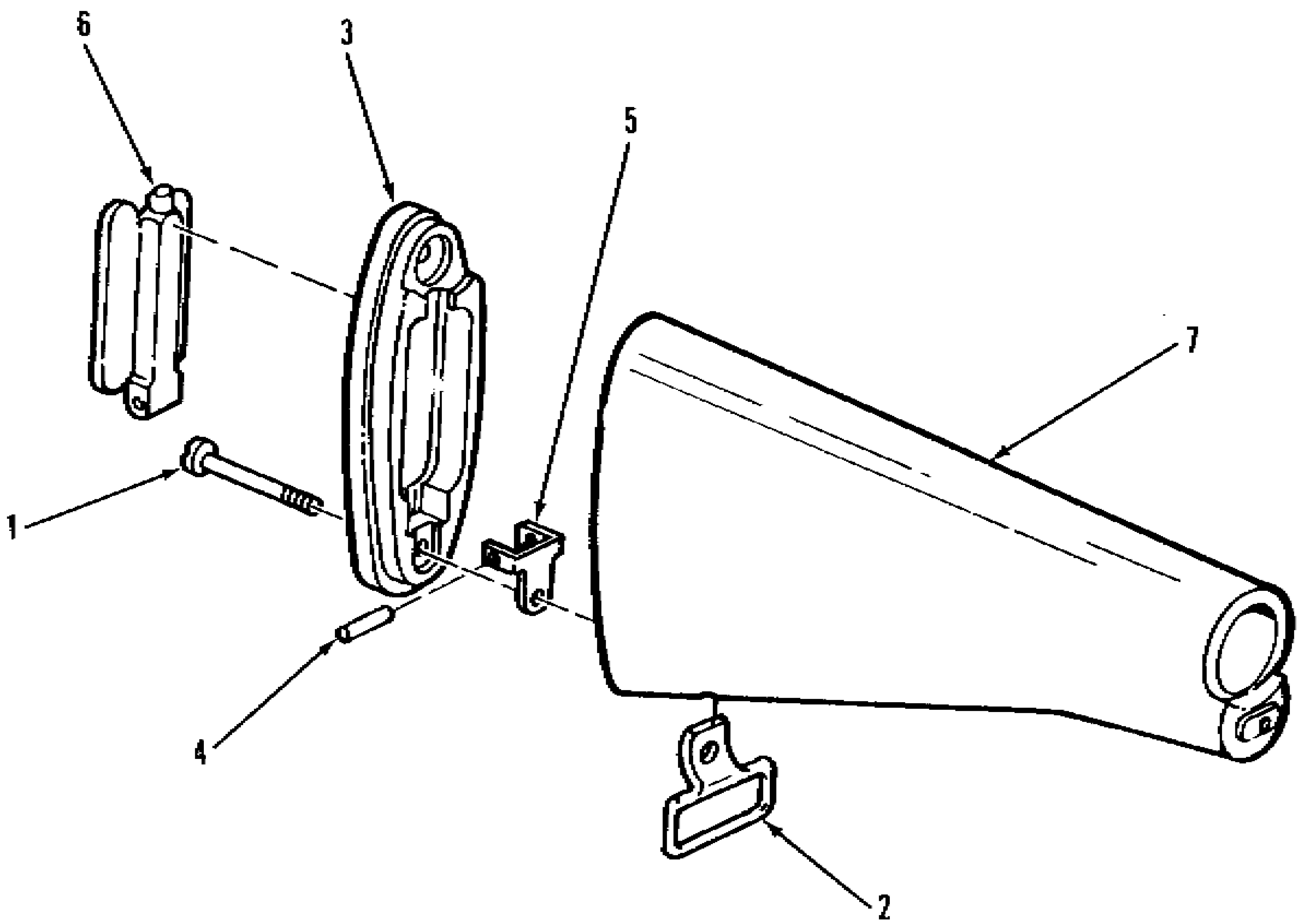


NOTE

Early model M16 rifles did not have a recess in which to install item no. 8 (spring, helical, compression) or item no. 9 (detent, takedown pin). Pivot pin, NSN 1005-00-992-6671, must be used on this model.

Figure C-10. Lower receiver and extension assembly 8448604 (M16) and 8448578 (M16A1)

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 04 LOWER RECEIVER AND EXTENSION ASSEMBLY 8448604 (M16) AND 8448578 (M16A1)		
C-10	1	PAOZZ	5305-00-912-7296	96906	MS35276-284	SCREW, MACHINE	EA	1
C-10	2	PAOZZ	5310-00-527-3634	96906	MS35335-61	WASHER, LOCK	EA	1
C-10	3	PAOZZ	1005-00-056-2250	19204	8448632	GRIP, RIFLE PLASTIC, BLACK	EA	1
C-10	4	PAOZZ	5360-00-992-7292	19204	8448516	SPRING, HELICAL, COMPRESSION	EA	1
C-10	5	PAOZZ	1005-00-992-6567	19204	8448631	DETENT, SAFETY	EA	1
C-10	6	PAOZZ	1005-00-992-6657	19204	8448627	SCREW, BUTT CAP	EA	1
C-10	6.A	PAOZZ	5305-01-147-8585	19200	9349128	SCREW, BUTT CAP (USE WITH ITEM 7-A)	EA	1
C-10	7	PAFFF	1005-00-489-0369	19200	8448650	STOCK, GUN, SHOULDER ASSY	EA	1
C-10	7.A	PAFFF	1005-01-135-4973	19200	9349119	BUTTSTOCK ASSEMBLY	EA	1
C-10	7.B	PAOZZ	5365-01-146-7692	19200	9349129	SPACER, STEPPED (USE WITH ITEM 7-A)	EA	1
C-10	8	PAOZZ	5360-00-992-6655	19204	8448586	SPRING, HELICAL, COMPRESSION	EA	2
C-10	9	PAOZZ	1005-00-992-6654	19204	8448585	DETENT, TAKEDOWN PIN	EA	2
C-10	10	PAOZZ	1005-00-992-6653	19204	8448584	PIN, TAKEDOWN	EA	1
C-10	11	PAOZZ	1005-00-017-9537	19204	8448621	PIN, PIVOT	EA	1
C-10	12	PAOZZ	1005-00-937-3078	19200	8448615	BUFFER ASSEMBLY	EA	1
C-10	13	PAOZZ	5360-00-992-6665	19204	8448629	SPRING, HELICAL, COMPRESSION	EA	1
C-10	14	PAFZZ	5315-00-812-3312	96906	MS16562-119	PIN, SPRING STEEL	EA	1
C-10	15	PAFZZ	1005-00-017-9548	19200	8448628	CATCH, BOLT	EA	1
C-10	16	PAFZZ	1005-00-056-2247	19204	8448634	PLUNGER, BOLT CATCH	EA	1
C-10	17	PAFZZ	5360-00-056-2246	19204	8448633	SPRING, HELICAL, COMPRESSION	EA	1
C-10	18	PAFZZ	1005-00-056-2201	19204	8448638	CATCH, MAGAZINE	EA	1
C-10	19	PAFZZ	1005-00-992-7302	19204	8448636	BUTTON, MAGAZINE CATCH	EA	1
C-10	20	PAFZZ	5360-00-992-7301	19204	8448637	SPRING, HELICAL, COMPRESSION	EA	1
C-10	21	PAFZZ	1005-00-992-6650	19204	8448599	PIN, AUTOMATIC SEAR	EA	1
C-10	22	PAFZZ	1005-00-992-6649	19200	8448595	SEAR AUTOMATIC ASSEMBLY	EA	1
C-10	23	PAFZZ	1005-00-992-6666	19204	8448630	LEVER, SELECTOR	EA	1
C-10	24	PAFZZ	1005-00-992-7309	19204	8448609	PIN, HAMMER AND TRIGGER	EA	2
C-10	25	AFFFF		19204	8448610	HAMMER ASSY	EA	1
C-10	26	PAFZZ	1005-00-999-0406	19204	8448635	DISCONNECTOR	EA	1
C-10	27	AFFFF		19204	8448591	TRIGGER ASSY	EA	1
C-10	28	XAFFA		19204	8448605	LOWER RECEIVER, AND EXTENSION SUBASSEMBLY, M16 755	EA	1
C-10	28	XAFFA		19204	8448579	LOWER RECEIVER AND EXTENSION SUBASSEMBLY, M16A1 194	EA	1



AR 922750

Figure C-11. Shoulder gun stock assembly 8448650

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0401 SHOULDER GUN STOCK ASSEMBLY 8448650		
C-11	1	PAOZZ	5305-00-463-3893	19204	8448654	SCREW, SELF-LOCKING BUTT PLATE	EA	1
C-11	2	PAOZZ	1005-00-403-0964	19204	8448652	SWIVEL, SLING, SMALL	EA	1
C-11	3	PAOZZ	1005-00-403-0963	19204	8448656	PLATE, BUTT SHOULDER GUN STOCK	EA	1
C-11	4	PAOZZ	5315-00-463-3894	19204	8448655	PIN, STRAIGHT, HEADLESS	EA	1
C-11	5	PAOZZ	5340-00-463-3892	19200	8448653	HINGE, ACCESS DOOR	EA	1
C-11	6	PAOZZ	1005-01-228-8504	19200	9381380	DOOR ASSEMBLY,	EA	1
C-11	7	XAFFF		19200	8448651	BUTTSTOCK	EA	1

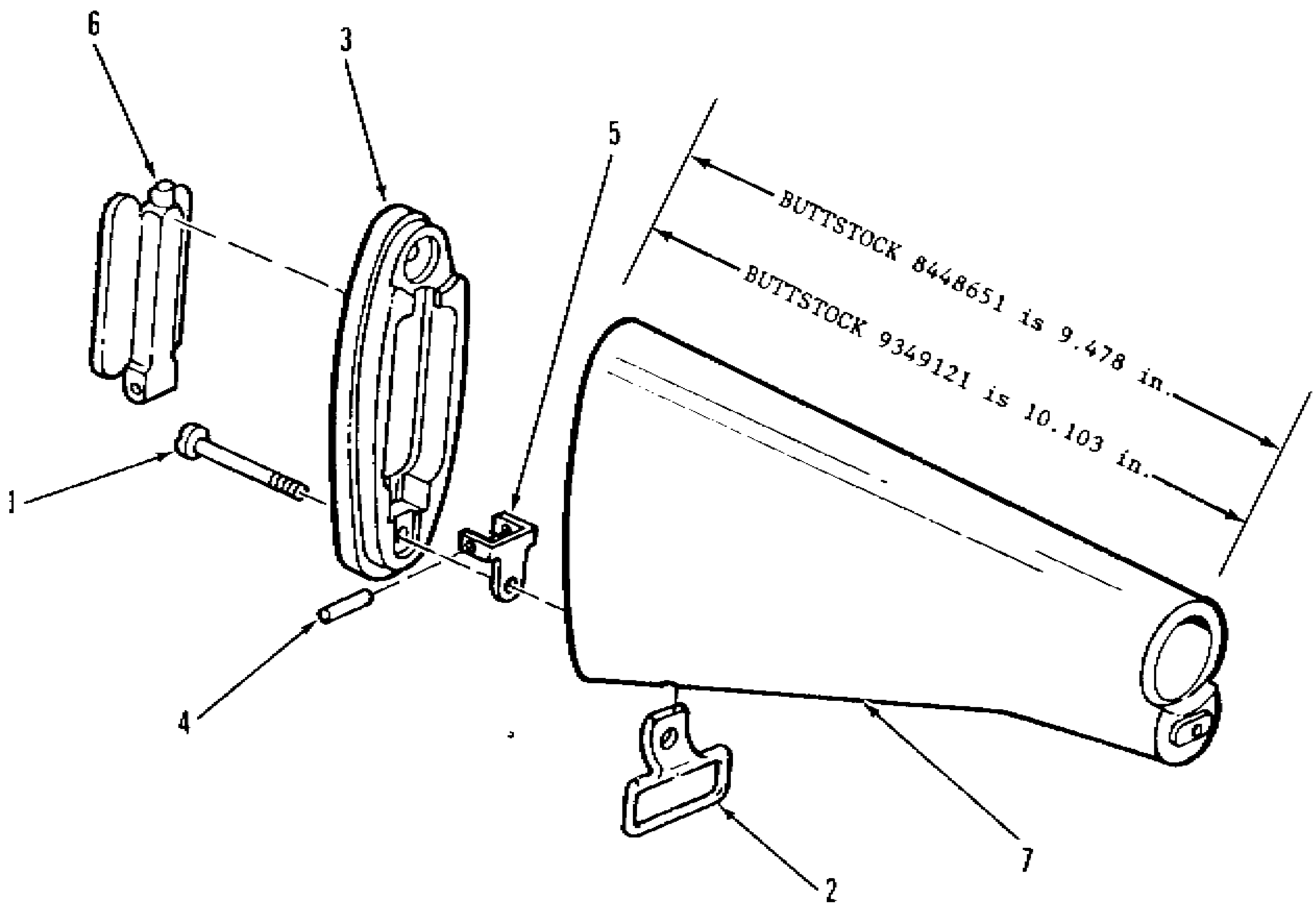


Figure C-11A. Buttstock assembly 9349119

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0401 BUTTSTOCK ASSEMBLY 9349119		
C-11A	1	PAOZZ	5305-01-144-1494	19200	9349120	SCREW, SELF-LOCKING BUTT PLATE	EA	1
C-11A	2	PAOZZ	1005-00-403-0964	19204	8448652	SWIVEL, SLING, SHACL	EA	1
C-11A	3	PAOZZ	1005-01-146-7685	19200	9349130	PLATE, BUTT SHOULDER GUN STOCK	EA	1
C-11A	4	PAOZZ	5315-00-463-3894	19204	8448635	PIN, STRAIGHT, HEADLESS	EA	1
C-11A	5	PAOZZ	5340-00-463-3892	19200	8448653	HINGE, ACCESS DOOR	EA	1
C-11A	6	PAOZZ	1005-01-228-8504	19200	9381380	DOOR ASSEMBLY	EA	1
C-11A	7	XAFFF		19200	9349121	BUTTSTOCK	EA	1

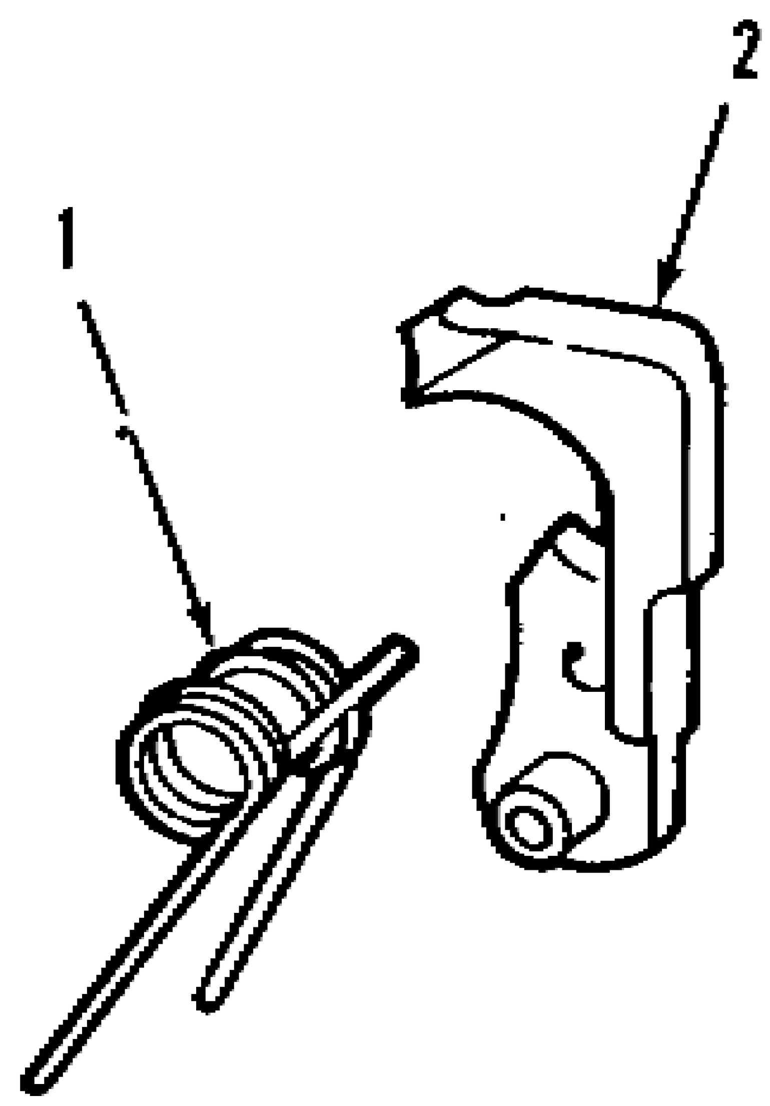


Figure C-12. Hammer assembly 8448610

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0402 HAMMER ASSEMBLY		
						8448610		
C-12	1	PAFZZ	5360-00-992-6648	19204	8448611	SPRING, HELICAL, TORSION....................................	EA	1
C-12	2	PAFZZ	1005-00-017-9551	19200	8448612	HAMMER, FIRING, SMALL SMALL....................................	EA	1

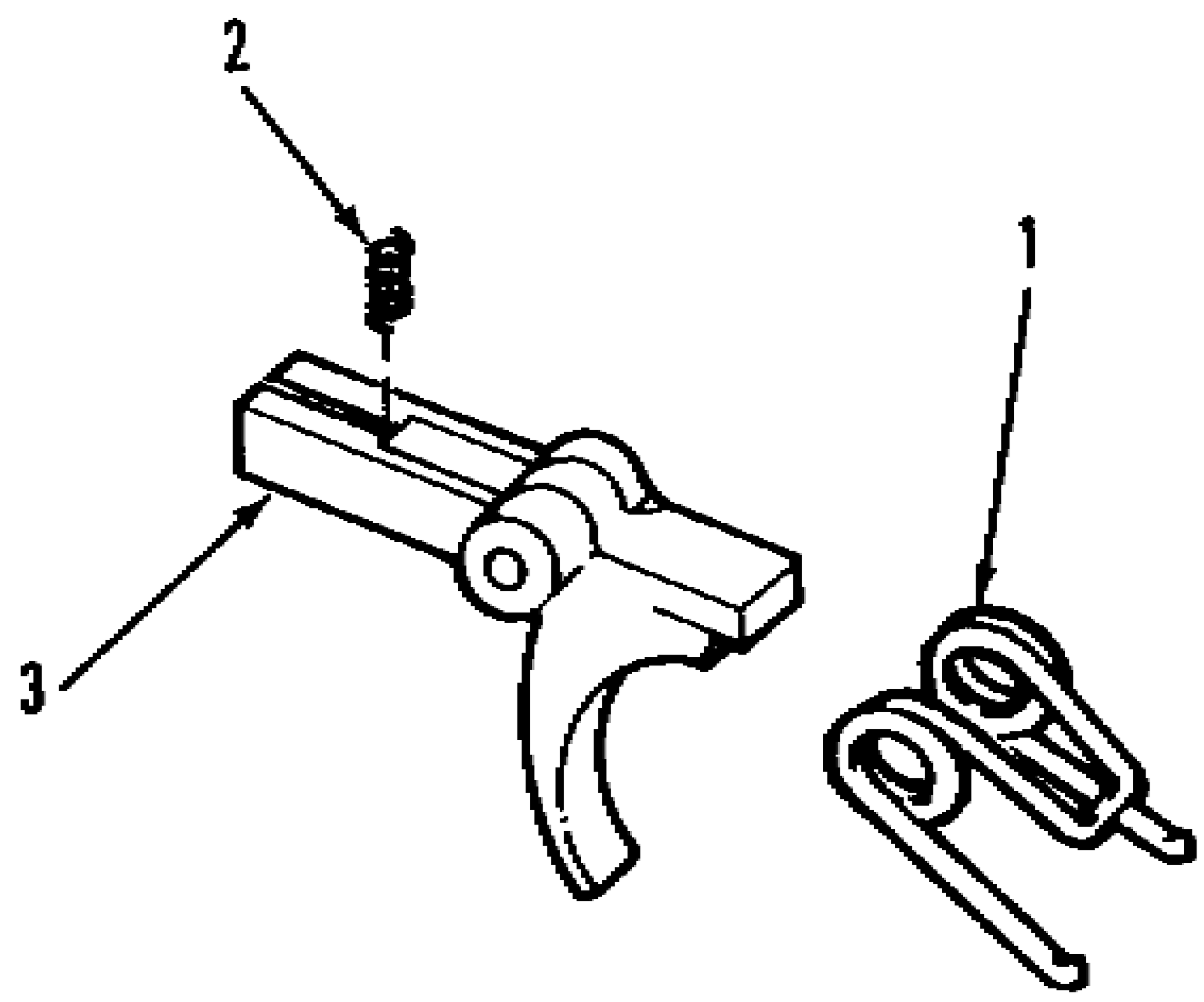
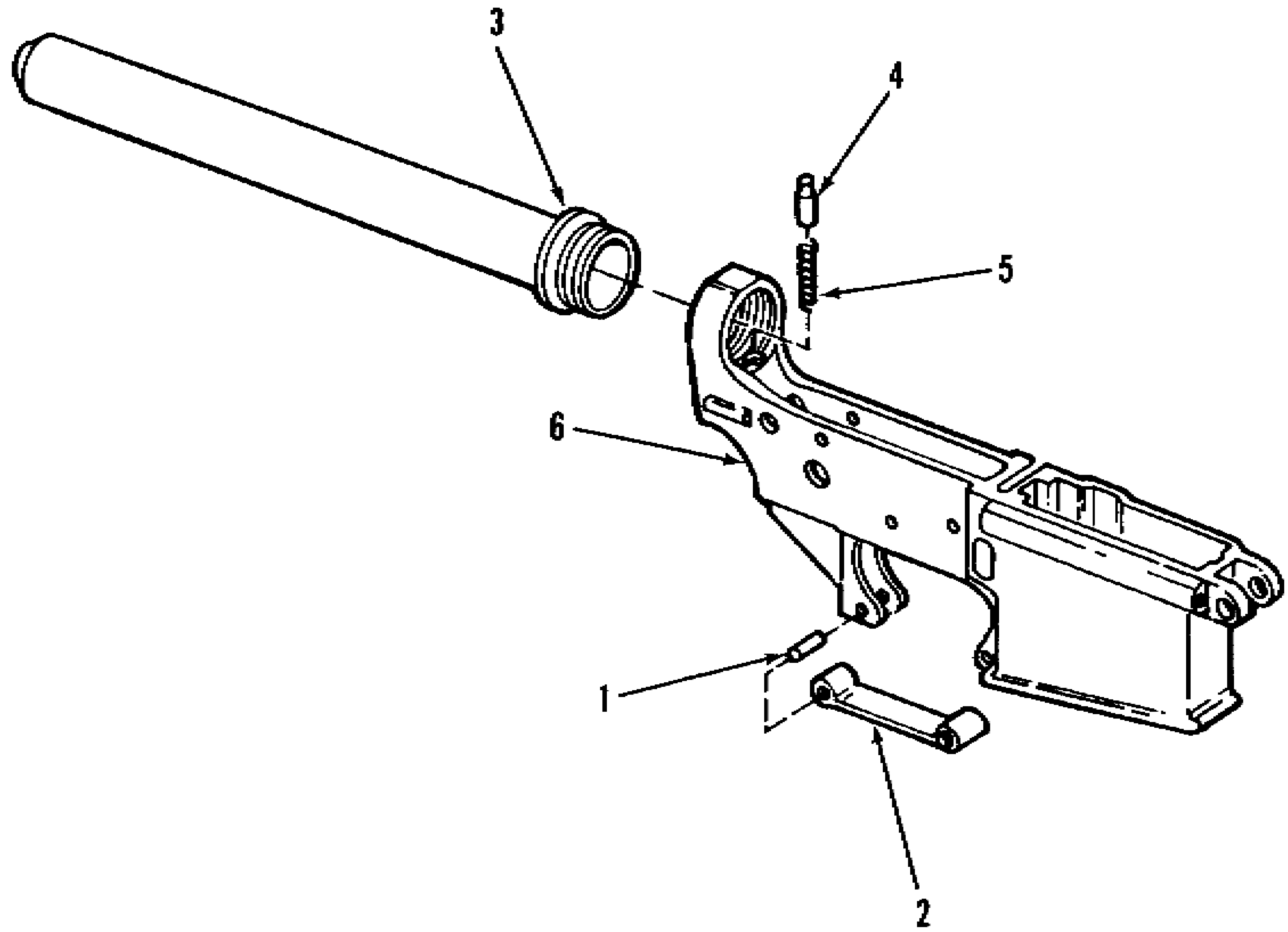


Figure C-13. Trigger assembly 8448591

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0403 TRIGGER ASSEMBLY		
						8448591		
C-13	1	PAFZZ	5360-00-992-7308	19204	8448593	SPRING,HELICAL, TORSION	EA	1
C-13	2	PAFZZ	5360-00-992-7311	19200	8448594	SPRING,HELICAL, COMPRESSION	EA	1
C-13	3	PAFZZ	1005-00-992-7307	19204	8448592	TRIGGER	EA	1



AR 922753

Figure C-14. Lower receiver and extension subassembly 8448605 (M16) and 8448579 (M16A1)

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 0404 LOWER RECEIVER AND EXTENSION SUBASSEMBLY 8448605 (M16) AND 8448579 (M16A1)		
C-14	1	PAFZZ	5315-00-814-3530	96906	MS16562-35	PIN, SPRING..	EA	1
C-14	2	PAFZZ	1005-00-992-7299	19204	8448587	GUARD, TRIGGER...	EA	1
C-14	3	PAFZZ	1005-00-992-7297	19200	8448581	EXTENSION, LOWER RECEIVER	EA	1
C-14	4	PAFZZ	1005-00-992-6651	19204	8448582	RETAINER, BUFFER...	EA	1
C-14	5	PAFZZ	5360-00-992-6652	19200	8448583	SPRING, HELICAL, COMPRESSION	EA	1
C-14	6	XAFDD		19204	8448606	RECEIVER, LOWER NOTE: SERIAL NUMBER CONTROL M16.........755	EA	1
C-14	6	XAFDD		19204	8448580	RECEIVER, LOWER NOTE: SERIAL NUMBER CONTROL M16A1......194	EA	1

Section III. SPECIAL TOOLS LIST

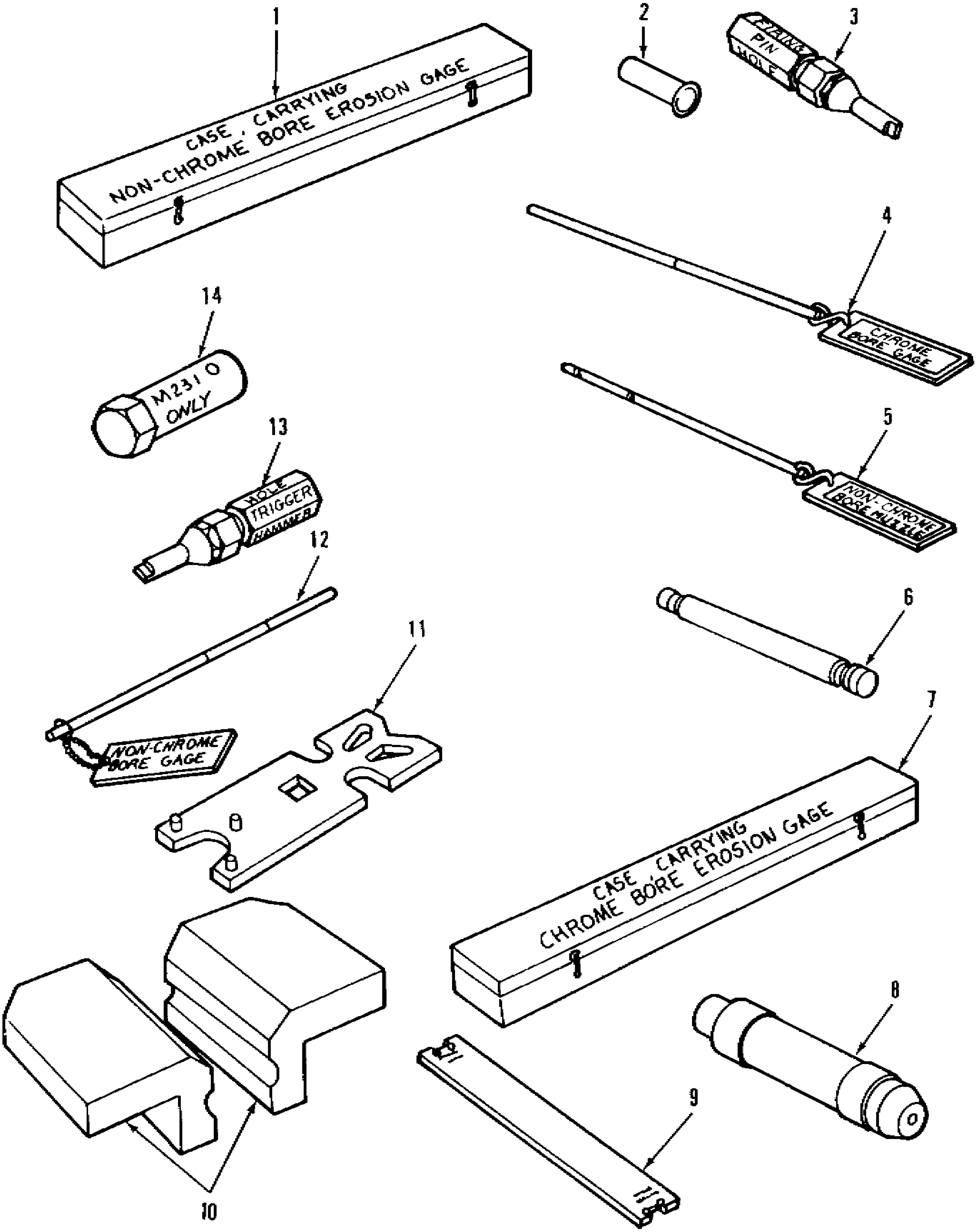


Figure C-15. Special tools

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) NATIONAL STOCK NUMBER	(4) FSCM	(5) PART NUMBER	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 9500 SPECIAL TOOLS		
C-15		ADFFA		19204	8426685	TOOL AND GAGE SET DS/GS SUPPORT MAINTENANCE FOR 5.56MM RIFLE, M16 RIFLE SERIES AND M231 FIRING PORT WEAPON BOI: 2 PER SUPPORTING DSU/GSU......................................	SE	
C-15	1	PAFZZ	4933-00-944-7084	19205	7799809	..CASE,CARRYING,GAGE, PART OF KIT P/N 8426685 (M16 ONLY)....	EA	
C-15	2	PAFZZ	4933-00-800-7508	19204	8448201	..REFLECTOR TOOL,CHAM PART OF KIT P/N 8426685...............	EA	
C-15	3	PAFZZ	5220-01-075-5004	19200	12620101	..GAGE,PLUG,PLAIN CYL PART OF KIT P/N 8426685...............	EA	
C-15	4	PAFZZ	5220-01-014-8183	19204	8448496	..GAGE,BARREL,EROSION PART OF KIT P/N 8426685...............	EA	
C-15	5	PAFZZ	5220-00-155-4925	19204	8448677	..GAGE,MUZZLE EROSION PART OF KIT P/N 8426685 (M16 ONLY)....	EA	
C-15	6	PAFZZ	4933-00-221-9391	19204	8448202	..GAGE,STRAIGHTNESS PART OF KIT P/N 8426685.................	EA	
C-15	7	PAFZZ	4933-01-035-5607	19204	12006359	..CASE,BORE GAGE PART OF KIT P/N 8426685....................	EA	
C-15	8	PAFZZ	4933-00-070-7814	19204	7799734	..GAGE,HEADSPACE PART OF KIT P/N 8426685....................	EA	
C-15	9	PAFZZ	4933-00-070-7815	19204	7799735	..GAGE,FIRING PIN PRO PART OF KIT P/N 8426685...............	EA	
C-15	10	PAFZZ	4933-00-070-9151	19204	11010032	..FIXTURE,BARREL REMO PART OF KIT P/N 8426685...............	EA	
C-15	11	PAFZZ	4933-00-070-9152	19204	11010033	..WRENCH,COMBINATION PART OF KIT P/N 8426685................	EA	
C-15	12	PAFZZ	4933-00-912-3409	19205	7799792	..GAGE,BARREL EROSION PART OF KIT P/N 8426685 (M16 ONLY)....	EA	
C-15	13	PAFZZ	5220-01-043-9473	19204	12006472	..GAGE,PLUG,TAPER CYL PART OF KIT P/N 8426685...............	EA	
C-15	14	PAFZZ	1005-01-081-4835	19200	11828589	..WRENCH,EXTENSION,RE PART OF KIT P/N 8426685...............	EA	

Section IV. NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIGURE NO.	ITEM NO.	STOCK NUMBER	FIGURE NO.	ITEM NO.
1005-00-017-9537	C-10	11	5360-00-978-1025	C-8	10
1005-00-017-9538	C-9	5	1005-00-978-1026	C-8	6
1005-00-017-9539	C-9	2	5360-00-978-1027	C-8	7
1005-00-017-9540	C-9	3	1005-00-978-1028	C-8	5
5360-00-017-9541	C-8	14	1005-00-978-1029	C-8	2
1005-00-017-9542	C-8	15	1005-00-978-1030	C-8	3
1005-00-017-9543	C-7	5	5360-00-978-1032	C-8	4
1005-00-017-9546	C-1	4	1005-00-978-1035	C-6	11
1005-00-017-9547	C-2	2	1005-00-978-1036	C-6	10
1005-00-017-9548	C-10	15	1005-00-978-1038	C-6	6
1005-00-017-9550	C-8	15	1005-00-979-3929	C-7	1
1005-00-017-9551	C-12	2	1005-00-979-3930	C-7	2
5315-00-017-9552	C-5	1	5360-00-979-3931	C-7	3
5315-00-017-9552	C-9	1	5360-00-992-6648	C-12	1
1005-00-056-2201	C-10	18	1005-00-992-6649	C-10	22
5360-00-056-2246	C-10	17	1005-00-992-6650	C-10	21
1005-00-056-2247	C-10	16	1005-00-992-6651	C-14	4
1005-00-056-2250	C-10	3	5360-00-992-6652	C-14	5
1005-00-056-2251	C-6	1	1005-00-992-6653	C-10	10
1005-00-056-2252	C-6	2	1005-00-992-6654	C-10	9
5315-00-058-6044	C-6	5	5360-00-992-6655	C-10	8
5365-00-064-2652	C-8	8	1005-00-992-6657	C-10	6
4933-00-070-7814	C-15	8	5360-00-992-6665	C-10	13
4933-00-070-7815	C-15	9	1005-00-992-6666	C-10	23
4933-00-070-9151	C-15	10	1005-00-992-6667	C-10	5
4933-00-070-9152	C-15	11	1005-00-992-7280	C-6	4
1005-00-152-3441	C-6	7	1005-00-992-7283	C-4	2
5220-00-155-4925	C-15	5	1005-00-992-7284	C-4	1
1005-00-167-4336	C-1	2	1005-00-992-7285	C-2	4
4933-00-221-9391	C-15	6	1005-00-992-7287	C-3	7
5365-00-252-6853	C-6	9	1005-00-992-7288	C-3	2
5315-00-282-3642	C-8	1	1005-00-992-7290	C-3	1
1005-00-403-0962	C-11	6	1005-00-992-7291	C-3	5
1005-00-403-0963	C-11	3	5360-00-992-7292	C-10	4
1005-00-403-0964	C-11	2	5360-00-992-7292	C-3	6
5340-00-463-3892	C-11	5	1005-00-992-7294	C-2	3
5305-00-463-3893	C-11	1	1005-00-992-7297	C-14	3
5315-00-463-3894	C-11	4	1005-00-992-7299	C-14	2
1005-00-489-0369	C-10	7	5360-00-992-7301	C-10	20
5360-00-523-8084	C-9	4	1005-00-992-7302	C-10	19
5310-00-527-3634	C-10	2	1005-00-992-7307	C-13	3
5315-00-597-5086	C-3	4	5360-00-992-7308	C-13	1
1005-00-738-6213	C-4	3	1005-00-992-7309	C-10	24
1005-00-760-3768	C-3	3	5360-00-992-7311	C-13	2
4933-00-800-7508	C-15	2	5360-00-999-0404	C-5	3
5315-00-812-3312	C-10	14	1005-00-999-0405	C-5	2
5315-00-814-3530	C-14	1	1005-00-999-0406	C-10	26
4933-00-912-3409	C-15	12	1005-00-999-1509	C-2	1
5305-00-912-7296	C-10	1	5220-01-014-8183	C-15	4
1005-00-921-5004	C-1	1	5315-01-027-4759	C-8	12
1005-00-933-8089	C-6	3	4933-01-035-5607	C-15	7
1005-00-937-3078	C-10	12	5220-01-043-9473	C-15	13
4933-00-944-7084	C-15	1	5320-01-063-7635	C-7	4
1005-00-978-1022	C-8	11	5220-01-075-5004	C-15	3
1005-00-978-1023	C-8	9	1005-01-081-4835	C-15	14

FSCM	PART NUMBER	FIGURE NO.	ITEM NO.	FSCM	PART NUMBER	FIGURE NO.	ITEM NO.
96906	MS16562-106	C-6	5	19204	B426685	C-15	
96906	MS16562-119	C-10	14	19204	B448201	C-15	2
96906	MS16562-35	C-14	1	19204	B448202	C-15	6
96906	MS16562-96	C-8	1	19204	B448496	C-15	4
96906	MS16562-98	C-3	4	19204	B448501	C-1	3
96906	MS16626-1137	C-6	9	19204	B448502	C-2	3
96906	MS16632-1012	C-8	8	19204	B448503	C-2	2
96906	MS35276-284	C-10	1	19204	B448504	C-2	1
96906	MS35335-61	C-10	2	19204	B448505	C-2	5
80205	NAS561-3-10	C-8	12	19200	B448506	C-4	2
19204	11010032	C-15	10	19200	B448507	C-4	3
19204	11010033	C-15	11	19204	B448508	C-4	1
19200	11828589	C-15	14	19200	B448509	C-2	4
19204	12006359	C-15	7	19204	B448510	C-3	8
19204	12006472	C-15	13	19204	B448511	C-3	7
19200	12620101	C-15	3	19204	B448512	C-3	2
19204	7799734	C-15	8	19204	B448513	C-3	1
19204	7799735	C-15	9	19204	B448515	C-3	5
19205	7799792	C-15	12	19204	B448516	C-10	4
19205	7799809	C-15	1	19204	B448516	C-3	6

FSCM	PART NUMBER	FIGURE NO.	ITEM NO.
19204	8448517	C-1	4
19204	8448518	C-5	4
19200	8448519	C-5	2
19204	8448520	C-5	3
19204	8448522	C-1	5
19204	8448523	C-6	8
19200	8448524	C-8	15
19204	8448525	C-8	11
19204	8448532	C-8	10
19204	8448533	C-8	9
19204	8448534	C-8	5
19200	8448535	C-8	2
19200	8448536	C-8	7
19200	8448537	C-8	3
19200	8448538	C-8	4
19204	8448539	C-8	6
19200	8448540	C-8	14
19204	8448541	C-8	13
19200	8448542	C-9	4
19204	8448543	C-9	2
19204	8448544	C-9	3
19200	8448545	C-9	5
19204	8448554	C-6	11
19204	8448555	C-6	10
19200	8448557	C-6	1
19200	8448561	C-6	2
19200	8448567	C-6	6
19204	8448571	C-7	5
19200	8448572	C-7	1
19204	8448573	C-7	2
19204	8448574	C-7	3
19204	8448576	C-6	3
19204	8448577	C-6	4
19204	8448578	C-1	6
19204	8448579	C-10	28
19204	8448580	C-14	6
19200	8448581	C-14	3
19204	8448582	C-14	4
19200	8448583	C-14	5
19204	8448584	C-10	10
19204	8448585	C-10	9
19204	8448586	C-10	8
19204	8448587	C-14	2
19204	8448591	C-10	27
19204	8448592	C-13	3

FSCM	PART NUMBER	FIGURE NO.	ITEM NO.
19204	8448593	C-13	1
19200	8448594	C-13	2
19200	8448595	C-10	22
19204	8448599	C-10	21
19204	8448601	C-1	5
19204	8448602	C-6	8
19204	8448603	C-8	15
19204	8448604	C-1	6
19204	8448605	C-10	28
19204	8448606	C-14	6
19204	8448609	C-10	24
19204	8448610	C-10	25
19204	8448611	C-12	1
19200	8448612	C-12	2
19200	8448615	C-10	12
19204	8448621	C-10	11
19204	8448627	C-10	6
19200	8448628	C-10	15
19204	8448629	C-10	13
19204	8448630	C-10	23
19204	8448631	C-10	5
19204	8448632	C-10	3
19204	8448633	C-10	17
19204	8448634	C-10	16
19204	8448635	C-10	26
19204	8448636	C-10	19
19204	8448637	C-10	20
19204	8448638	C-10	18
19200	8448650	C-10	7
19200	8448651	C-11	7
19204	8448652	C-11	2
19200	8448653	C-11	5
19204	8448654	C-11	1
19204	8448655	C-11	4
19204	8448656	C-11	3
19200	8448658	C-11	6
19204	8448663	C-6	7
19200	8448670	C-1	1
19204	8448677	C-15	5
19204	8448697	C-7	4
19200	8448755	C-3	3
19200	8448770	C-1	2
13629	95113	C-5	1
13629	95113	C-9	1

APPENDIX D
EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE. This appendix lists expendable supplies and materials you will need to operate and maintain the 5.56-mm Rifle M16 and M16A1. These items are authorized to you by CTA 50-970, Expendable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

D-2. EXPLANATION OF COLUMNS.

a. *Column 1 - Item Number.* This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use carbon removing compound, item 4, app D").

b. *Column 2 - Level.* This column identifies the lowest level of maintenance that requires the listed item.

C - Crew/Operator Maintenance
O - Organizational Maintenance
F - Direct Support Maintenance

c. *Column 3 - National Stock Number.* This is the National stock number assigned to the item; use it to request or requisition the item.

d. *Column 4 - Description.* Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. *Column 5 - Unit of Measure (U/M).* Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	F	8040-00-944-7292	ADHESIVE KIT: (81348) MMM-A-1754	KT
2	O	8020-00-244-0153	BRUSH, ARTIST'S: metal ferrule, flat, chisel edge, 7/16 w, 1 1/8 l, exposed bristle (81348) H-B-241	EA
3	O	7920-00-205-2401	BRUSH, CLEANING, TOOLS AND PARTS: (96906) MS16746-29	EA
4	O	6850-00-965-2332	CARBON REMOVING COMPOUND: (81348) P-C-111	GL
5			CLEANER, LUBRICANT AND PRESERVATIVE: (27412)	
	C	9150-01-102-1473	CLP 1/2 oz bottle	EA
	O	9150-01-079-6124	CLP-4 4 oz bottle	EA
	O	9150-01-054-6453	CLP-5 pt bottle	EA
	F	9150-01-053-6688	CLP-7 gal bottle	EA
5A	C	9920-00-292-9946	CLEANER, TOBACCO PIPE (92849) DILLS	EA

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
6	O	5350-00-221-0872	CLOTH, ABRASIVE (58536) A-A-1206	SH
7			COATING COMPOUND, FLUORESCENT: paint for blank firing attachment (81349) MIL-P-21563	
	O	8010-00-181-7859	1 pt can	EA
7A	C	1005-00-809-2190	COVER, PROTECTIVE (19204) 8448213	EA
8	F		DICHLOROMETHANE, TECHNICAL: (81349) MILD6998	
		6810-00-244-0290	5 gal pail	CN
		6810-00-616-9188	600 lb drum	DR
9	O		DRY CLEANING SOLVENT: (81348) A-A-711	
		6850-00-281-1985	1 gal can	GL
10	O		ENAMEL: olive drab No. 3407 (81349) MIL-E-5556	
		8010-00-297-0560	1 gal can	GL
10A	O	8415-00-823-7457	GLOVES, CHEMICAL AND OIL PROTECTIVE (81348) ZZ-G-381	PR
11	F	9150-00-754-2595	GREASE, MOLYBDENUM DISULFIDE (81349) MIL-G-21164	LB
12	F	8010-00-527-2884	LACQUER: black lusterless (81349) MIL-L-19538	GL
13	O		LUBRICANT, SOLID FILM: (81349) MIL-L-46147	
		9150-00-168-2000	16 oz spray can	OZ
13A	O	4940-00-795-3595	PAN, WASH (94453) 1211	EA
14	F	6850-00-826-0981	PENETRANT KIT: (81349) MIL-I-25135	KT
15	C		RAG, WIPING: (81348) DDD-R-30	
		7920-00-205-1711	50 lb bdl	LB

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
16	F	8030-00-670-8553	SEALING COMPOUND: (93648) DEVCONF	KT
17	C	1005-00-912-4248	SWAB, SMALL ARMS (19204) 11686408	EA

APPENDIX E
ILLUSTRATED LIST OF MANUFACTURED ITEMS

E-1. INTRODUCTION.

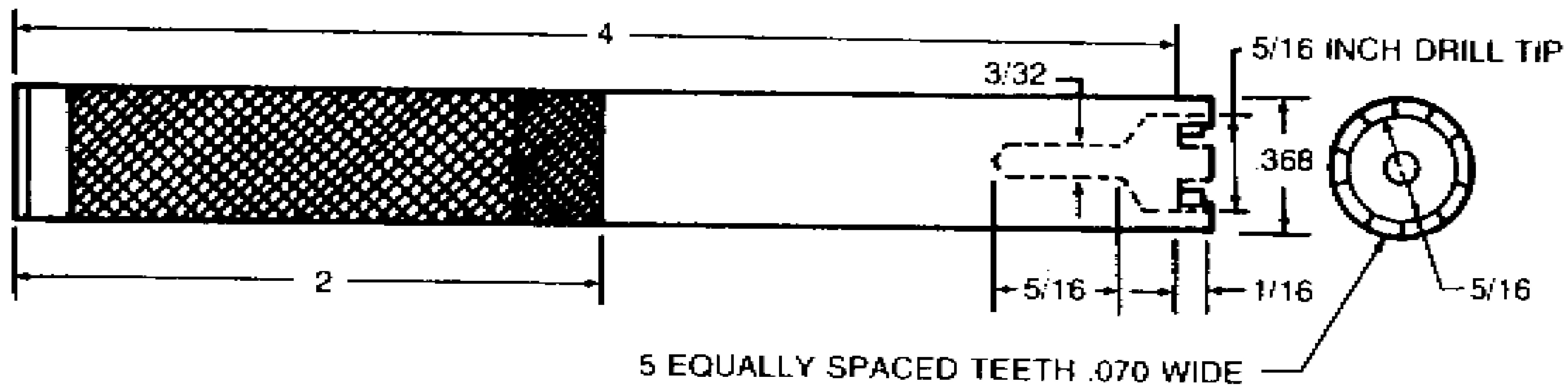
a. This appendix includes complete instructions for making items authorized to be manufactured or fabricated at organizational or direct support level.

b. A part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the figure which covers fabrication criteria.

c. All bulk materials needed for manufacture of an item are listed in a tabular list on the illustration.

INDEX

LOWER RECEIVER GAGE M16A1 RIFLE



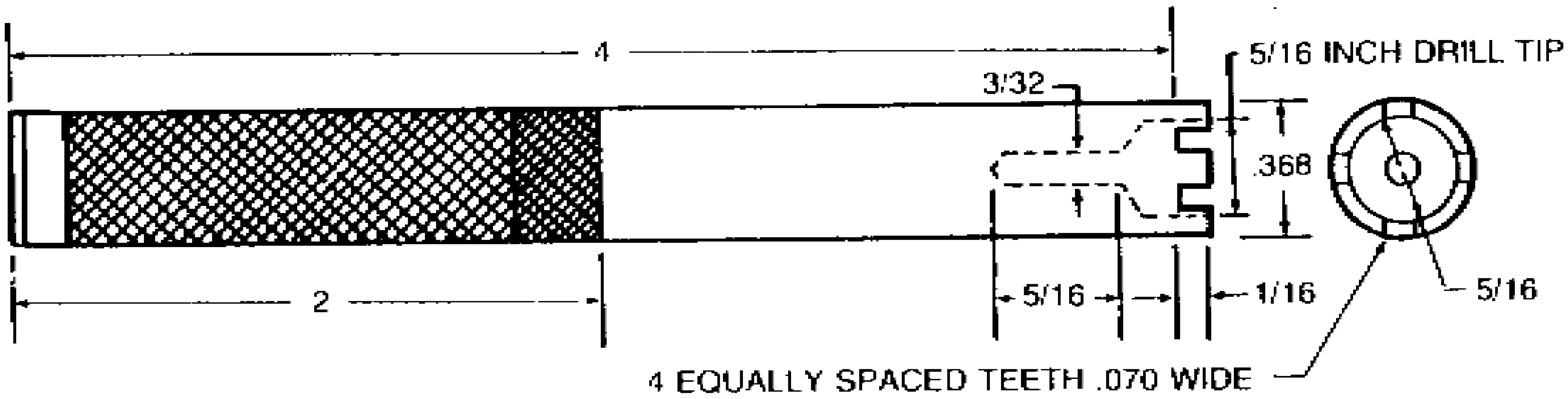
MATERIAL: MILD STEEL

NOTE: ALL DIMENSIONS SHOWN ARE IN INCHES

MATERIAL BLOCK
FSCM 81348 QQ-T-580 METAL BAR,
STEEL, GRADE C, CLASS W2-09
HOT ROLLED, ROUND, 0.375 INCH NOMINAL
DIAMETER, 3 FOOT NOMINAL LONG
NSN 9510-00-640-4407 OR EQUIVALENT

AR 922755

Figure E-1. Front sight post removing and installation tool for standard sight



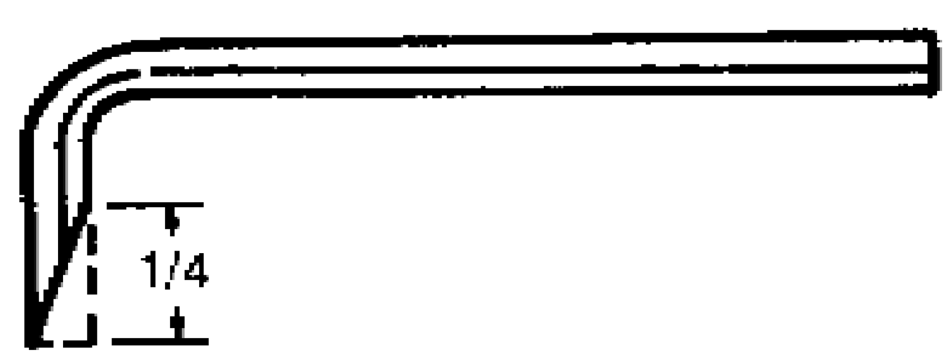
MATERIAL: MILD STEEL

MATERIAL BLOCK
FSCM 81348 QQ-T-580 METAL BAR,
STEEL, GRADE C, CLASS W2-09
HOT ROLLED, ROUND, 0.375 INCH NOMINAL
DIAMETER, 3 FOOT NOMINAL LONG
NSN 9510-00-640-4407 OR EQUIVALENT

NOTE: ALL DIMENSIONS SHOWN ARE IN INCHES

AR 922756

Figure E-2. Low light level front sight post removing and installation tool

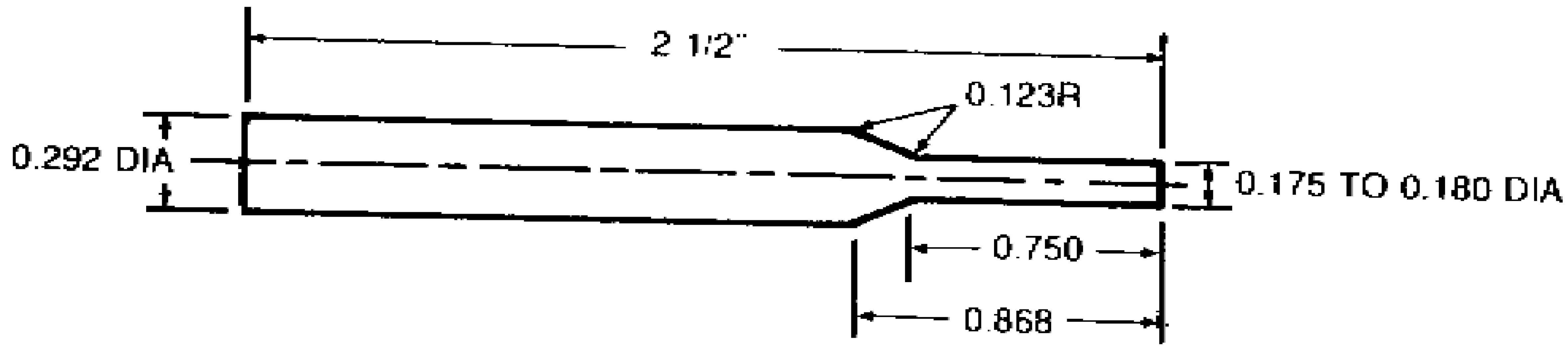


NOTE: 1. FABRICATE FROM 1/16 IN. SOCKET HEAD SCREW KEY NSN 5120-00-198-5398 OR EQUIVALENT.

2. ALL DIMENSIONS ARE IN INCHES.

AR 922734

Figure E-3. Pivot pin removing tool

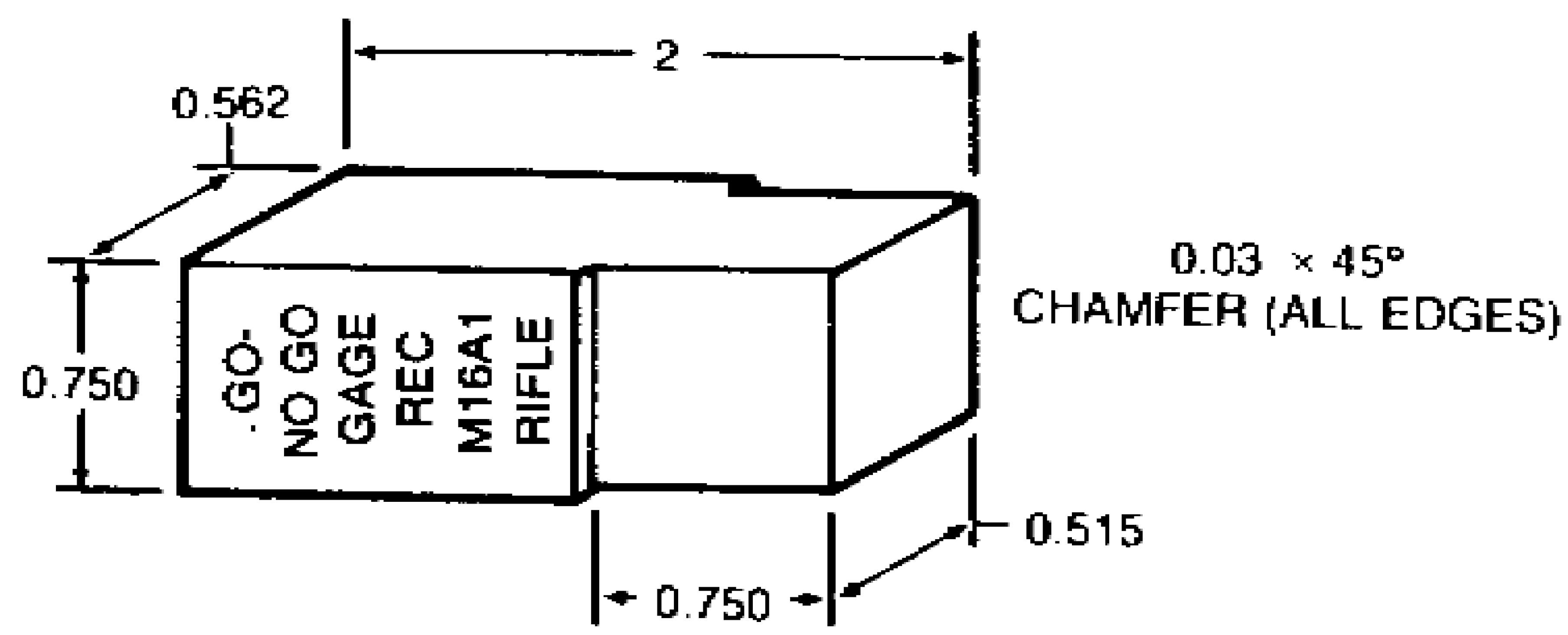


NOTE: ALL DIMENSIONS SHOWN ARE IN INCHES

MATERIAL BLOCK
FSCM 81348 QQ-T-580 METAL BAR,
STEEL, GRADE C, CLASS W2-09
HOT ROLLED, ROUND, 0.375 INCH NOMINAL
DIAMETER, 3 FOOT NOMINAL LONG
NSN 9510-00-640-4407 OR EQUIVALENT

AR 922842

Figure E-4. Key tool



MATERIAL BLOCK
FSCM 81348 QQ-T-580 METAL BAR,
STEEL, GRADE C, CLASS W2-09 OR
STEEL, GRADE C, CLASS 62-10,
HOT ROLLED, 0.750 INCH NOMINAL
SQUARE, 3 FOOT NOMINAL LONG
NSN 9510-00-541-9528 OR EQUIVALENT

NOTE: ALL DIMENSIONS SHALL BE TOLERANCE ± 0.005 EXCEPT GAGING WIDTH (0.515) WHICH SHALL BE TOLERANCE − 0.002

ALL DIMENSION ARE IN INCHES

AR 922757

Figure E-5. Lower receiver go-no go gage M16A1 rifle

APPENDIX F
TORQUE LIMITS

F-1. INTRODUCTION.

a. This appendix includes a standard torque table of the most commonly torqued screws, bolts, and nuts.

b. These torque values may be used when torque values are not specified.

c. The torque table values are given in inch-pounds. If a torque wrench is calibrated in foot-pounds, you need to divide the listed number by 12 to obtain the desired torque.

STANDARD TORQUE TABLE (INCH-POUNDS)

Torque Values in Inch-Pounds for Tightening Nuts

Bolt, Stud, or Screw Size	On standard bolt, studs, and screws having a tensile strength of 125,000 to 140,000 psi.		On bolts, studs, and screws having a tensile strength of 140,000 to 160,000 psi.	On high-strength bolts, studs, and screws having a tensile strength of 160,000 psi and over.
	Shear type nuts (AM320, AN364, or equivalent)	Tension type nuts and threaded machine parts (AN310, AN365, or equivalent)	Any nut, except shear type	Any nut, except shear type
8-32	7-9	12-15	14-17	15-18
8-36	7-9	12-15	14-17	15-18
10-24	12-15	20-25	23-30	25-35
1/4-20	25-30	40-50	45-49	50-68
1/4-28	30-40	50-70	60-80	70-90
5/16-18	48-55	80-90	85-117	90-114
5/16-24	60-85	100-140	120-172	140-203
3/8-16	95-110	160-185	173-217	185-248
3/8-24	95-110	160-190	175-271	190-351
7/16-14	140-155	235-255	245-342	255-428
7/16-20	270-300	450-500	475-628	500-756
1/2-13	240-290	400-480	440-636	480-792
1/2-20	290-410	480-690	585-840	690-990
9/16-12	300-420	500-700	600-845	700-990
9/16-18	480-600	800-1,000	900-1,220	1,000-1,440

ALPHABETICAL INDEX

By Order of the Secretary of the Army:

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